Deliverable D 9.1: Intermediate report on access to advanced ACTRIS stations

Mylène Ndisi, Sabine Philippin (CNRS)

Work package no	**WP9**
Deliverable no.	**D9.1**
Lead beneficiary	
Deliverable type	☑ R (Document, report) ☐ DEC (Websites, patent fillings, videos, etc.) ☐ OTHER: please specify..
Dissemination level	☑ PU (public) ☐ CO (confidential, only for members of the Consortium, incl Commission)
Estimated delivery date	**Month 24**
Actual delivery date	**12/06/2017**
Version	**1**
Comments	Submitted late due to time contraints for othe ongoing activities.

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

Table of Content

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

Intermediate report on access to advanced ACTRIS stations

1 Introduction

ACTRIS-2 provides a coordinated framework to support and facilitate physical access to a selected number of advanced ACTRIS stations in Europe to a wide community of users. The objective of this document is to report in details on the status of the Transnational Access activity to observational facilities halfway through the project.

2 Infrastructures providing Transnational access to advanced ACTRIS stations

Within work package 9, ACTRIS-2 provides physical, free-of-charge, transnational access (TNA) to users from the academic and private sector to 18 observational facilities in Europe. The ACTRIS stations offering TNA are advanced experimental facilities for atmospheric observations and are unique within Europe. The facilities were selected for their representative location (with respect to air mass type, altitude etc.), most of them have been operational for decades (except for a few new stations), documenting a long record and experience of access with available logistics to accommodate external research groups, and offer high quality research equipment making them world-class research stations. An overview of the observational facilities offering TNA is given in Figure 1, a short description of the infrastructures is provided on the ACTRIS website at: http://www.actris.eu/DataServices/ObservationalFacilities/AccesstoObservationalFacilities.aspx

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

Figure 1: Overview of observational facilities within ACTRIS-2 providing physical TNA.

The observational facilities comprise high altitude research stations, e.g., PUY (1565 m, regional background), MAIDO (2160 m, south-western, tropical Indian Ocean), CMN (2165m, polluted environment, ISAF (2370 m, subtropical site, free troposphere), JFJ (3500 m, free troposphere), stations in Northern Europe's boreal forest (SMR, HYM, PAL at border of Arctic), maritime/continental stations (MHD, CESAR / SIR, MEL, KOS), Mediterranean stations with urban background (MSY, GRA, CIAO, FKL, CAO).

The opportunities for physical access allow external users, including those from the private sector and users from outside Europe, to have access i) to cutting-edge research opportunities and ii) to intercomparison campaigns and for instrument testing using the state-of-the-art equipment for aerosol and cloud profiles, aerosol-cloud observations, and near-surface aerosol and trace gas observations, fostering research at the forefront of science; iii) to international capacity building opportunities by participating in scientific measurement campaigns and comprehensive measurement programmes, and by benefitting from the scientific expertise and support provided by the personnel operating the infrastructures, and from the available high level of services, including training to young scientists and new users.

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

3 Description of the transnational access procedure

The TNA activity to observational facilities offered within ACTRIS-2 is based on specific guidelines and rules for access that follow the Horizon 2020 rules. The procedure is described below, including the advertisement of the opportunities for access and the specific procedure of proposal submission, evaluation, and selection.

3.1 Description of the publicity concerning the opportunities for access

A number of measures have been taken to advertise the opportunities of transnational access within ACTRIS-2:

3.1.1 Continuous calls for access vie web portal and TNA infrastructure websites

An official permanent call concerning transnational access opportunities to the observational facilities within WP9 was largely publicized at project start via the ACTRIS-2 web portal and simultaneously permanently promoted via the websites of the observational facilities and related projects/networks concerned:

- Call for TNA on the ACTRIS website: http://www.actris.eu/Outreach/News/CallsforTNA/ContinousCallforTNA.aspx, and permanent information via www.actris.eu >Data & Services: http://www.actris.eu/DataServices/ObservationalFacilities/AccesstoObservationalFacilities.aspx .
- Link to call for TNA on the websites of the individual observational facilities:
  - CIAO: www.ciao.imaa.cnr.it
  - CMN: http://www.isac.cnr.it/cimone/TNA
  - SIRTA: www.sirta.fr (follow ACTRIS-2)
  - MAIDO: http://osur.univ-reunion.fr/observations/transnational-access/h2020-actris2-program/
  - SMR: http://www.atm.helsinki.fi/SMEAR/index.php/2012-09-27-10-21-52
  - CESAR: http://www.cesar-observatory.nl/
  - MEL: http://www.tropos.de/en/research/projects-infrastructures-technology/coordinated-observations-and-networks/actris/
  - FKL: http://finokalia.chemistry.uoc.gr/

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

- ISAF: http://izana.aemet.es/index.php?option=com_content&view=article&id=481:one-week-access-to-izana-subtropical-access-facility-isaf-in-the-framework-of-actris-2-project&catid=10:news&Itemid=49&lang=en
- GRA: http://atmosfera2.ugr.es/en/news/research-news/479-tna-en
- MSY: http://www.idaea.csic.es/index.php?option=com_content&view=article&id=482%3A-actris-2-ia-in-h2020&catid=34%3Anews&Itemid=56&lang=en
- MHD: http://macehead.org/index.php?option=com_content&view=article&id=21&Itemid=55

The wide launch of TNA is documented in milestone MS1.2: Launch of call for TNA (TNA1-4) linked to the joint coordination of TNA provision within WP1 (task WP1.4), and milestone MS9.2: Advertisement of opportunities and launch of continuous call for TNA to advanced ACTRIS stations (WP9), all timely achieved in month 3.

3.1.2 Special calls for access

A number of special calls to the calibration and observational facilities were launched and widely announced during RP1. The measurement campaigns and related activities have pursued defined objectives for calibration and intercomparison exercises, measurement campaigns, or joint TNA opportunities with collaborating EU-Integrating activities. These were organized either by the corresponding access providers and/or were linked with ACTRIS-2 networking and joint research activities if carried out at an infrastructure open for TNA, and allowed other research groups outside the project to participate via the TNA opportunities. An overview of corresponding TNA opportunities organized in RP1 is listed in Table 1.

Table 1: Special calls to transnational access opportunities launched since project start

TNA Opportunity	Dates	Organizer / Access provider / Location	Website address
MelCol 2015	June 2015	TROPOS / MEL Germany	http://www.actris.eu/Outreach/News/Campaigns/Melpitzcolumn2015.aspx
PACE 2015	September-December 2015	FMI / PAL Finland	http://www.actris.eu/Events/Campaigns/PACE2015.aspx
Athens Smog Campaign	December 2015-February 2016	NOA / FKL Greece	http://www.actris.eu/Outreach/News/Campaigns/JRA1AthensDec2015.aspx
Cyprus campaign 2016	April 2016	CYI, CAO Cyprus	http://www.actris.eu/Outreach/News/Campaigns/Cyprus2016.aspx
INTERACT II	July-December 2016	CNR-IMAA / CIAO Italy	http://www.actris.eu/Outreach/News/Campaigns/INTERACTIICampaign2016.aspx
Precipitation Field Campaign 2016	September-December 2016	CNRS / SIRTA France	http://www.actris.eu/Portals/46/Outreach/Campaigns/SIRTA-TNA_precipitation_2016.pdf?ver=2016-07-19-175127-140
Intercomparison Field campaign at PUY	October 2016	CNRS / PUY France	http://www.actris.eu/Outreach/News/Campaigns/Intercomparisonfieldcampaign2016.aspx
ACTRIS-2 & EUFAR TNA	2016-2017		http://www.actris.eu/Outreach/News/CallsforTNA/CallforACTRIS-2EUFARjointTNA.aspx
CyCARE Campaign 2017	October 2016-August 2017	TROPOS/CYPRUS University of Technology	https://www.tropos.de/en/institute/departments/remote-sensing-of-atmospheric-processes-new/ground-based-remote-sensing/cyprus-clouds-aerosol-and-rain-experiment-cycare/
PTR-MS Intercomparison	September 2017	Cabauw The Netherlands	http://www.actris.eu/Portals/46/Events/Events%20descriptions/2017/PTR-MS%20campaign%20sept%202017/PTR.pdf?ver=2017-04-03-134820-307

3.1.3 Mailing lists and electronic means

The launch of TNA opportunities and permanent and special calls for access to observational facilities are generally advertised via various mailing lists within the project but also outside ACTRIS-2, e.g., mailing lists of international networks and coordinated observations, projects, and cooperating scientific communities: ENVRIplus (Implementation and operation of cross-cutting services and solutions for clusters of ESFRI and other relevant research infrastructure initiatives, EU H2020), EUFAR (European Facility for Airborne Research, EU FP5,6,7), ESA (European Space Agency), ChArMEx (Chemistry-Aerosol-Mediterranean Experiment), INUIT (Ice Nuclei Research Unit). Furthermore used are the mailing lists of the more than 20 beneficiaries and linked third parties hosting TNA infrastructures, the mailing lists of national ACTRIS communities within Europe, and communication through direct links with international collaborators.

3.1.4 Conferences and outreach activities

The ACTRIS-2 infrastructures offering TNA have been largely promoted during invited talks, conferences (presentations and posters), workshops, project meetings, communications and direct announcements. Project brochures have been distributed at such events. Direct oral advertisement has proven efficient to encourage scientific activities at, e.g., TNA stations. See also Figures 2a-c).

Figure 2a: ACTRIS-2 poster advertising the access opportunities via TNA (EAC-2016)

Figure 2b: Advertisement for TNA infrastructure at Jungfraujoch, Switzerland (WP9).

Figure 2c: Advertisement for TNA to observational facilities (2nd ACTRIS-2 Science meeting, Granada).

The outreach events include, among others:

- ACTRIS-2 General Meetings: ACTRIS Kick-off meeting (June 2015, Rome, Italy), 1st ACTRIS-2 Science meeting (February 2016, Frascati, Italy), 2nd ACTRIS-2 Science meeting (January 2017, Granada, Spain).
- Conferences: EAC 2015 (6-11 Sep 2016, Milan, Italy), EGU 2016 (17-22 Apr 2016, Vienna, Austria), ICCP 2016 (17th International Conference on Clouds & Precipitation, 25-29 Jul 2016, Manchester, UK), EAC 2016 (4-9 Sep 2016, Tours, France), EGU 2017 (23-28 Apr 2017, Vienna, Austria); as well as a number of ESA conferences, EMEP and EIONET meetings.
- Workshops and summer schools: ECARS workshop, May 2016, Magurele, Romania; WLMLA (regular workshop on Lidar measurements of the Latin American Lidar Network, Summer school on Atmospheric Aerosol Physics, Measurement, and Sampling (May 2015, 2016, 2017 Hyytiälä, Finland).
- Project meetings: Specific Working Groups, including those organized by EU H2020 projects, e.g., GAIA-CLIM, EU Cost Action like "TOPROF" working with operational ceilometers; EU-FP7 BACCHUS General Assembly (January 2016, Zurich, Switzerland)
- Information via official beneficiary contacts (e.g., at Czech Hydrometeorological Institute) towards the Ministry of Environment, Environmental agencies and Met-offices focused both on EU members (Slovakia, Croatia, Bulgaria, Estonia) and non-EU countries (Albania, Macedonia, Azerbaijan, Armenia, Serbia, etc.), and via local authorities towards their international co-operations.

3.1.5 Newsletters, brochures, and other outreach material

TNA infrastructure and services is also advertised through further promotional channels such as posters, brochures, and leaflets (Figures 3a-c), distributed at conferences or meetings or by e-mail.

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

Figure 3a: ACTRIS-2 project brochure promoting the access opportunities via TNA (WP1).

Figure 3b: Leaflet offering Transnational Access to the infrastructure Košetice – Křešín u Pacova (WP9 / KPO), July 2015.

Figure 3c: Leaflet about description of opportunities at the Atmospheric research facility at Agia Marina Xiliatou (WP9 / CAO), June 2016.

3.2 <u>Description of the selection procedure</u>

3.2.1 Centralized access and application procedure

The provision of TNA to observation facilities under WP9 is jointly coordinated between the Coordination office and the infrastructure access providers. A central access procedure with harmonised interfaces for application and reporting process via the website has been implemented at project start. The ACTRIS-2 web portal is the central entry point and interface between the external users seeking access, the infrastructures (ACTRIS-2 stations), and the TNA coordination team. Any user group requesting access to an observational facility is required to submit an application form. The TNA proposal form for physical access to the 18 advanced ACTRIS stations offering access is available on the ACTRIS website (http://www.actris.eu/DataServices/ObservationalFacilities/ApplyforTNA.aspx, see also Appendix A). The application form requires the user group to provide title and acronym of the project, planned project dates, scientific objectives and work that it wishes to carry out, including the names, nationalities and home institutions of the participating users. Further to information about the planned TNA and user information described above, the WP9-related application forms asks for integration of the TNA project in the ACTRIS-2 domain (aerosol

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

profiling, cloud profiling and aerosol-cloud interactions, near-surface aerosol properties, or near-surface gas phase measurements), TNA type (training aspect for young researchers, mobility of experts, or a combination of both), and estimated project costs. Moreover, information about TNA results (data) is requested from the user group: the ACTRIS data centre offers the possibility to archive measurement data resulting from TNA for long-term storage and access, e.g., in the case of additional instruments being deployed at the site.

3.2.2 Review and selection procedure

The TNA coordinating team coordinates the review process. Firstly, the applications are reviewed by the TNA coordination team to ensure formal compliance with the EC regulations (e.g., for transnationality aspects). TNA is only provided to user groups within an outside EU or associated countries. However, limits may be applied access for user groups with a majority of users not working in an EU or associated country is possible (max 20%). The proposals are then sent to and evaluated by an independent review panel, (see Appendix B) its members were nominated at the first ACTRIS-2 General Assembly in month 2. The review panel for evaluating the proposals consists of members covering the different ACTRIS-2 scientific domains: aerosol profile, cloud profile, near surface aerosols, and trace gases, encompassing more than one hundred experts in the field, of which half of them are external reviewers, i.e., independent from the project (see Appendix B). Each proposal is reviewed by two external and two internal reviewers, based on a TNA review form (see Appendix C), a minimum of 3 reviews are considered for final acceptance of each TNA request. Only proposals having achieved a minimum threshold are accepted for ACTRIS-2 support. The proposals are selected according to specific criteria: scientific quality/originality, innovation aspects, impact (60%), priority to new users (20%), young scientist and female participation (20%). Particular efforts are made to promote scientific excellence in less-favoured regions in Central and Eastern Europe or beyond. Some infrastructures grant financial support towards expenses for travel and subsistence to facilitate the TNA, but is available on request only (via above mentioned application form). Any financial support is jointly decided between the TNA coordination team and the access provider in charge of the dedicated travel budget, following positive evaluation of the project. Reimbursement of the financial grant is usually made after project completion and after submission of the required TNA documentation through the host institution. The TNA coordination team at the Coordination Office informs the applicants of the final decision and financial support allocated. Upon acceptation, the TNA group leader is invited to contact the access provider to organize the access. Any reviewers' comments are transmitted to the research team in order to address specific issues raised or to improve execution of the project. Upon acceptance, the users are furthermore requested to accept the TNA conditions including agreement to provide TNA documentation, to disseminate the TNA results (except for SMEs), etc. The follow-up of the access process, i.e., the coordination of review and selection procedure, is led by the TNA coordination team at the Coordination office. A flow diagram of the TNA process within ACTRIS-2 is shown in Figure 4.

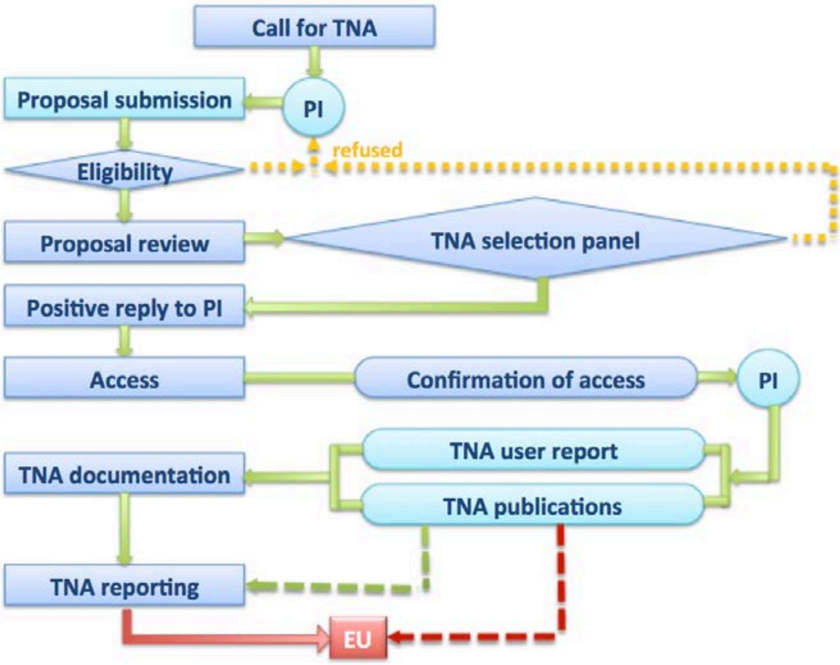

Figure 4: ACTRIS-2 TNA application, review, and reporting process.

The definition of the access procedure for TNA to the advanced ACTRIS stations within WP9 has been completed at project beginning (month 2) and the corresponding milestones MS9.1 was achieved as planned.

3.2.3 Post-access process

The users of the accepted TNA project commit to provide a number of TNA reporting documents, within a reasonable time frame after the TNA has come to end, which includes a document confirming the quantity of access provided, signed by the user group leader and by the access provider (see Appendix D), an online TNA user report for providing information (http://www.actris.eu/Documentation/ACTRIS2IAinH2020(20152019)/WPdocuments/DocumentsforTNAusers.aspx), and a scientific activity report (see Appendix E). Additionally, any results from work carried out under the ACTRIS-2 TNA activity (e.g., publications, conference contributions) must acknowledge the project and support of the European Community and should be reporting to the TNA coordination team. Furthermore, the users are encouraged to make data resulting from TNA available via the ACTRIS Data Centre.

4 Summary of Transnational Access activity to advanced ACTRIS stations

The call for physical access was launched in the beginning of the project. Since the start of the project until M23, 84 proposals to 16 observational facilities have been received of which 72 were selected for access support. 5 proposals were not eligible and 5 more were not evaluated sufficiently high to reach the threshold to be accepted. 2 more are currently under the review process. The quantity of access provided (referring to estimated access and ongoing projects) in units of RWD (1 research-person-working-day) since the beginning of the project totals to 2,066 days corresponding to 94% out of the estimated access of 2,195 days foreseen in the contract. This is a positive figure showing that access foreseen has already largely been allocated. In total, 1069.5 days of physical access have been provided within WP9 since the start of the project upto M23 in the second reporting period.

Upto M23, from the 46 TNA projects that have been carried out, users from Europe are 74%. This corresponds to 34 projects. 13 projects so far came from outside Europe corresponding to 28% and 13 days of access (see Figure 5 below).

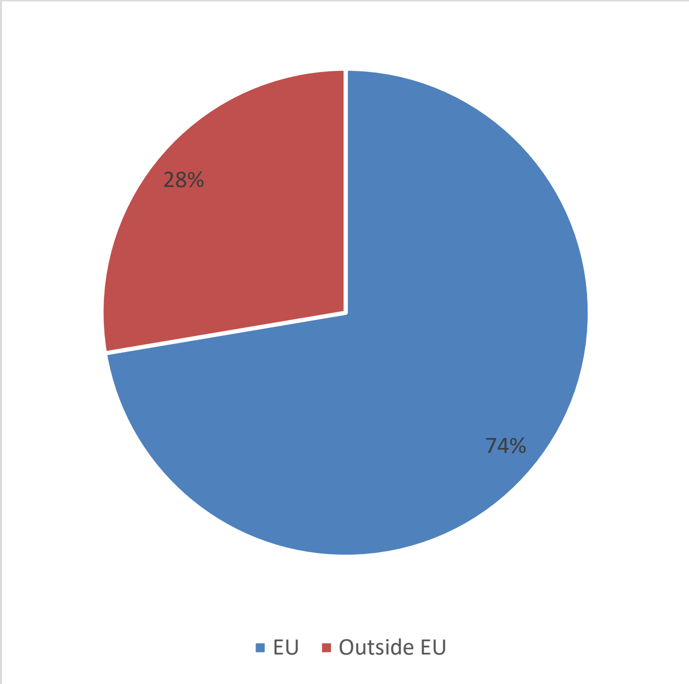

Figure 5: Breakdown of TNA user projects originating from coutnries within and outside EU, respectively during the first half of the ACTRIS-2 project.

5 out of the total 84 TNA requests accepted were from the private sector (representing 22 access days). In the 1st reporting period SME requests were Envricontrol SA, Belgium. Under the second reporting period were (CIMEL-France, Palas GmBH-Germany, Sunset Laboratory BV-The Netherlands and Aerodyne Researh Inc) of which Aerodyne Research Inc from the USA is being evaluated and INTERACT II ongoing. A deliverable 4.2 with a summary for private sector users was submitted in Month 24. 4 out of 5 private sector TNA projects have been reported representing 7% of total TNA so far also 15 access days. Figure 6 shows the different sector representation including the private sector, the public sector (universities and research institutes) . The total five are shortly summarized in the following:

1) Sunset Laboratory Inc. (The Netherlands) @ CSIC Montseny (MSY, Spain)

Sunset Laboratory Inc. is a company specialized for manufacturing devices for organic carbon and elemental carbon (OC-EC) aerosol analysis and in the field of aviation, mining, marine, astronomy, construction, and weather research. Their equipment is suitable for the laboratory or in the field, and ready for use with different methods, among others the EUSAAR2 protocol developed within the ACTRIS-1 predecessor EU project. Sunset Laboratory has developed the

Sunset Semi-Continuous Field OCEC analyzer. To evaluate its performance with the EUSAAR2 protocol, Sunset Laboratory has used the ACTRIS-2 site MSY during a TNA project “SLOPE”. The EUSAAR2 is a required protocols for the networks of all EU member states to measure EC and OC in particulate matter at background sites according to the Council Directive 2008/50/EC on ambient air quality and cleaner air for Europe. The European Committee of Standardization (CEN), has recently adopted EUSAAR2 as the reference temperature protocol to be used when performing the offline, thermal-optical/transmittance (TOT) Organic and Elemental Carbon analysis (OCEC) (CEN/TC 264/WG 35 prEN16909:2016). Sunset investigates the comparison of the online OCEC analysis method with the offline, reference method at a challenging rural environment, dominated by biogenic emissions, for their comparability and to evaluate the high-time resolution concentrations.

2) Palas GmbH (Germany) @ Puy de Dome high altitude station (PUY, France)

Palas is a company specialized in particle measurement technology and the development and production of filter test systems and optical aerosol spectrometers. In October 2016, Palas participated in an intercomparison field campaign of cloud microphysical probes with two of its Fidas® 200 S instruments. Fidas® 200 S is a fine dust monitoring and ambient air measurement system for ambient air monitoring of fine dust for regulatory purposes. Goal of this campaign is to evaluate a new automatic instrumentation for clouds droplet real time analysis. The new Fidas® 200 analyzer supplies a particle size distribution (mass and/or number) between 0,4 and 40 µm, The aim is to study the interaction between droplets size and condensation nucleus with two analysers, installed side by side. One is configured to measure droplets size, the other to dry droplets and to evaluate condensation nucleus size. If successful, the low-cost and low-maintenance instrument could be an efficient solution for long-term measurement of cloud droplets at ACTRIS stations.

3) Envicontrol SA (Belgium) @ CNR IMAA Atmospheric Observatory (CIAO, Italy)

Envicontrol is specialized in measuring equipment for gases, air and dust (sampling, analysis, calibration and generating of gases), as well as in acquisition and management systems for monitoring and warning networks. The SME has exclusive dealership for about 15 manufacturers in Benelux, France, and Africa. Envicontrol has participated in the measurement campaign INTERACT-II (INTERcomparison of Aerosol and Cloud Tracking) where a number of commercial instruments were involved: two multi-wavelength Raman lidars, a Raymetrics

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

UV scanning Raman lidar, a VAISALA CT25K ceilometer, a VAISALA CL51 ceilometer, a JENOPTIK CHM15k ceilometer, a Campbell CS135s ceilometer, and a Sigma Space mini-Micro Pulse Lidar. Envicontrol has been in charge of operating the mini-MPL system to study the system performance for the measurements of aerosols and clouds, instrument stability, and accuracy of calibration. Envicontrol furthermore received training for advanced Raman lidar operation and use of calibration procedure for the lidar depolarization technique.

4) CIMEL Electronique S.A.S (France) @ CNR IMAA Atmospheric Observatory (CIAO, Italy)

CIMEL is a manufacturer automatic meteorological instrumentation with expertise in the field of meteorology, atmosphere optics, design of integrated systems, software solution development and production control. For over 25 years, CIMEL has developed specific instruments for atmospheric monitoring that are deployed by leading scientific organisations in the world. CIMEL has developed remote sensing instruments CE318 photometer and the CE370 Micro-Lidar. CIMEL has participated in the INTERACT II (Intercomparison of aerosol and Cloud Tracking) measurement campaign to study the atmosphere through the use and integration of its different active and passive remote sensing techniques in order to evaluate the potential use of such automated instrumentation for monitoring of aerosols produced by different source (both natural and anthropic, such as desert dust, typically observed in the Mediterranean area during the summer, fires present in Eastern Europe and North America). CIMEL has been in charge of operating the automated CE370/CE376 Lidar, of data acquisition and analysis of data measured in combination with a CE318-T photometer, and the comparative analysis with CIMEL iAAMS software. CIMEL further has been supportive for CIMEL Lidar performance for aerosol and cloud measurements, and to evaluate the stability, sensitivity, and uncertainties of automated lidars and ceilometers in terms of instrumental sensitivity and uncertainties, and to put these into context by simultaneously evaluating the performance of a high specification research lidar. This is a first-time intercomparison of commercial ceilometers, lidars, with advanced research systems available by ACTRIS-2.

5) Aerodyne Research Inc. (USA) @ Monte Cimone/Po Valley facility (CMN, Italy)

Aerodyne Research Inc. is an instrument manufacturer that provides instrumentation and consulting for environmental air quality monitoring and measurements. The Aerodyne Center for Sensor Systems and Technology (CSST) designs and develops innovative sensors utilizing proprietary technology for its own use and for delivery to private, academic and government customers. It has built and marketed state-of-the-art monitors that employ cavity attenuated phase shift (CAPS) techniques. One of such CAPS monitors is the CAPS SSA, a single scattering albedo monitor for direct, combined measurements of both extinction and scattering in the same volume. Particle absorption can be obtained by subtraction of the two measured quantities (extinction minus scattering), with an uncertainty of 5-6%. Upcoming in July 2017, Aerodyne participates in an international field campaign at the Monte Cimone and Po Valley sites to assess the accuracy of aerosol absorption and black carbon measurements. The CAPS SSA is collocated with other instrumentation for aerosol measurements of optical, physical, and chemical properties: a nephelometer, an Aerosol Chemical Speciation Monitor, an optical particle counter. The presence of multiple techniques for measuring aerosol absorption (by difference with the CAPS SSA and on a filter) will allow measurement intercomparison and observe the changes in optical properties with changes in the chemical composition of the sub-micron aerosol as determined by the ACSM. In particular, the specific goal of the campaign is a comprehensive closure between absorption coefficient and BC concentration and an assessment of the reasons for the variability of the mass absorption efficiency using commercial instrumentation.

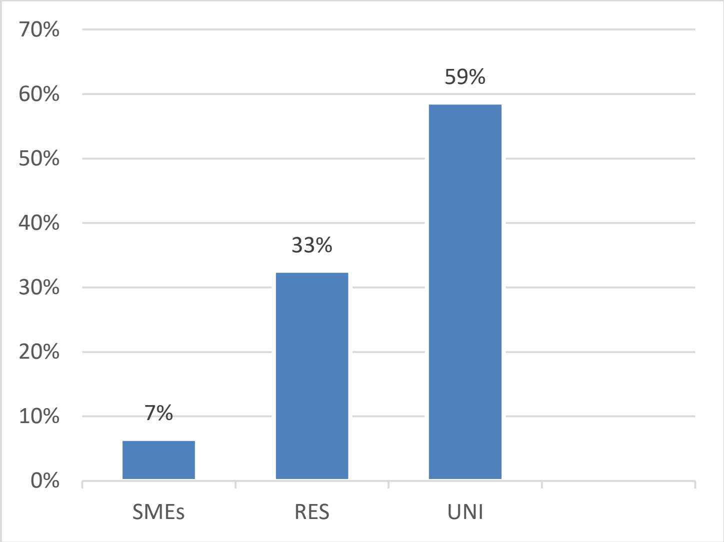

Figure 6: Representation of public sector (Research, Universities) and private sector (SME) TNA users during the first half of the ACTRIS-2 project.

From the 72 projects accepted, 46 have been carried out, 26 projects are still on-going. The research domain targeted by the completed TNA projects so far are aerosol profiling (33%), near-surface aerosol properties (41%) and trace gases and cloud profiling (28%) as summarized in figure 7 below.

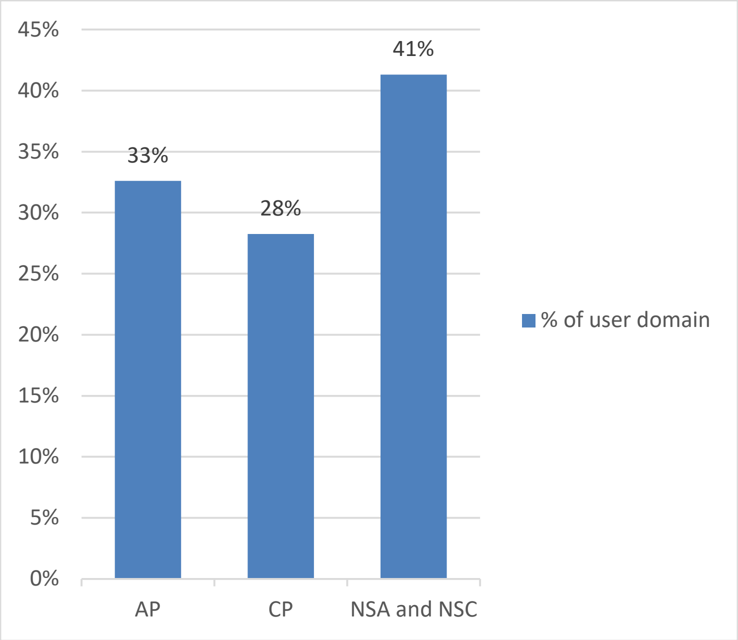

Figure 7: Represenation of project users in aerosol profiling domain, cloud profiling and near surface aerosol properties and trace gases.

94 researchers (representing 36% of 264 total estimated users, as in Annex 1 of the grant agreement) have been able to benefit from TNA to the advanced observational facilities, of which the (85%) are new users, i.e., users that have never visited the ACTRIS stations for research before (See Figure 9). 28% of the researchers are female scientists (see Figure 8). Although 36% (undergraduate and postgraduate) of the researchers were young scientists as shown in Figure 10, 24% of the projects aimed at training purposes (to get trained in observation measurements, scientific integration, for developing specific expertise, or to benefit from a facility which is not available in the home country of the researchers), 50% contributed to mobility of experts (e.g., for participation in scientific campaigns, for instrumental synergies, to carry out interdisciplinary research project or collaborative campaigns), and 28% represented a combination of both, training and mobility. A representation of the training is as in Figure 11.

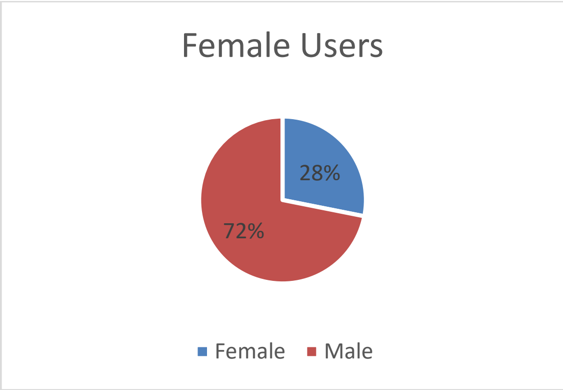

Figure 8:Representation of female users.

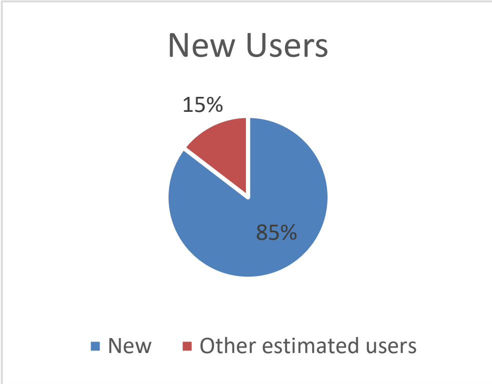

Figure 9: Represantation of new users.

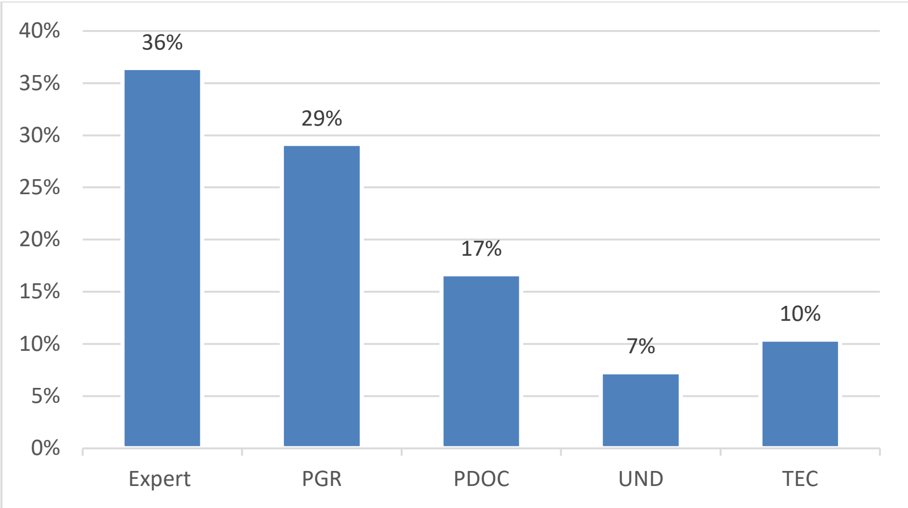

Figure 10: Representation of user profile ranging from expert, post graduate, post doctorate, undergraduate, technician.

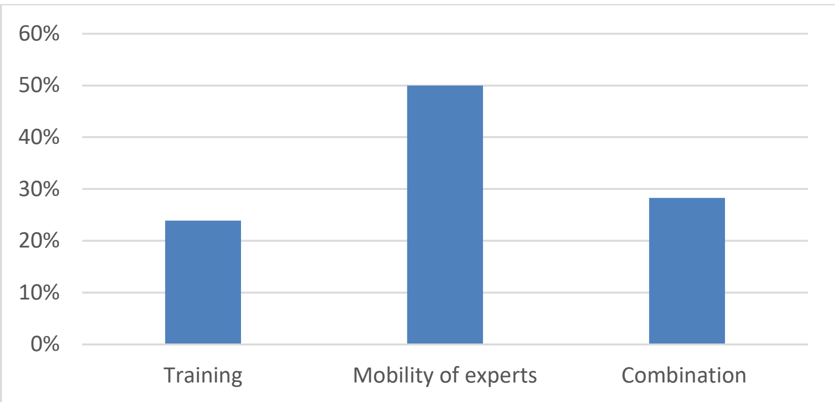

Figure 11: A representation of the projects submitted for different purposes.

The transnational access activities are described by observational facility and direct scientific output resulting from TNA is summarized in scientific activity reports available on the ACTRIS website (restricted access) at http://www.actris.eu/Documentation/ACTRIS2IAinH2020(20152019)/WPdocuments/TNAOverview/Physical.aspx.

5 Description of Transnational Access

Description of the Transnational Access activity by observational facility The transnational access activities are described by observational facility. The direct scientific output resulting from TNA is summarized in scientific activity reports available on the ACTRIS website (restricted access) at http://www.actris.eu/Documentation/ACTRIS2IAinH2020(20152019)/WPdocuments/TNAOverview/Physical.aspx.

5.1 CNR IMAA Atmospheric Observatory, CIAO (CNR)

1) CIAO has hosted two TNA project, for a total duration of 15 days. Within the project, named MICROLIRA, 11 access days, (MICROphysical characterization of cirrus clouds by LIdar and RAdar instruments), the vertical profile of dust and cirrus cloud extinction coefficient retrieved using the Raman Lidar technique has been compared with the current MPLNET V3 extinction retrieval obtained from micro-pulse lidars, which is based on the assumption of the value of the extinction-to-backscatter ratio (Lidar Ratio). The vertical profile of the extinction coefficient is a fundamental climate variable to estimate the radiative forcing and the microphysical properties of atmospheric particles. Moreover, cirrus cloud extinction coefficient is required in the Heymsfield parameterization to calculate cirrus clouds mean crystal size and Ice Water Content (IWC): both the extinction coefficient and the IWC are input parameters for the Fu-Liou-Gu (FLG) radiative transfer code to calculate TOA forcing. The work carried out in the frame of MICROLIRA has allowed to quantify the sensitivity of the Fu-Liou-Gu (FLG) Radiative Transfer Model to estimate the aerosol-cloud net radiative forcing using different lidar instruments/algorithms/techniques applied to the retrieval of the extinction coefficient and in particular the effect of the smoothing of lidar profiles. The effect of smoothing on the

atmospheric features of the original vertical lidar profile is resulted substantive and must be taken into account when a radiative analysis is performed with pre-processed lidar data.

The results of the project have been presented at EGU 2016, DUST 2016, and at ICCP 2016 collecting good feedbacks; a journal article will be also submitted by the end of the year.

2) For the INTERACT-II project, 4 days, commercial ceilometers and a miniMPL lidar have been inter-compared in the frame of the INTERACT-II campaign and this was performed at CIAO (CNR-IMAA Atmospheric Observatory) in Tito Scalo, Potenza, Italy (760 m a.s.l., 40.60°N, 15.72°E) from July 2016 .

The stability, sensitivity and uncertainties of these commercial automatic lidars and ceilometers for tropospheric profiling of aerosols and clouds have been evaluated, using advanced research lidars as reference. The instruments involved in the campaign have been: Luftt CHM15k, Vaisala CT25K, VAISALA CL51, Campbell CS135, Sigma Space mini-Micro Pulse Lidar (MPL). The last three instruments have been deployed by the related manufacturers which have also provided their support in the data evaluation.

5.2 Monte Cimone taking advantage of Po Valley facility, CMN (CNR)

1) Two TNA projects have been approved for CMN infrastructure. The NICE project provided 8 access days to Basel University participants and was focused to study the variability of INPs of biological origin on a broader spatial scale. In fact it constitutes a first structure of such connection of Observatories, including Monte Cimone, Jungfraujoch, Puy de Dome, Izana and Haldde. NICE project was successful in collecting the first data on INPs of biological origin at Monte Cimone. Preliminary results confirm that at Cimone the passage of front systems accounts for larger airborne INPs. This project also allowed collecting simultaneous samples for determining IN with two different techniques, one carried out in Basel and the other at ISAC-CNR. A scientific publication is planned including these results.

2) This TNA, **AFPO** of 10 access days, acted as the preparatory phase to the use of the developed system (Automatic MICROTOPS measurements) with some more upgrades to assure the goodness and continuity in the measurement cycle, during the WP1 ACTRIS-2 Campaign planned for July 2017, for improving the accuracy of aerosol light absorption determinations, with the main goal of assessing the processes affecting the Mass Absorption Coefficients (MAC) variability.

Total access days of 18 so far.

5.3 SIRTA Atmospheric Research Observatory, SIR (CNRS)

1) Two TNA projects have been carried out. The aim of TREBOL project, 10 days, was by high frequency acquisition (1 Hz) of data from Doppler and/or Elastic lidar to investigate boundary layer turbulence by using the particle backscatter coefficient profiles, as the aerosols act as tracers. SIRTA has a long experience on mixing layer detection by lidar, and suitable instrumentation (e.g., IPRAL's laser) is available to perform the research work within this TNA.

New activities at the SIRTA observatory for the 1st reporting period consist of 4 topics: (1) a new multi-wavelength Raman (N2/H2O) Lidar was deployed at SIRTA in summer 2015. This allows us to provide vertical profiles of aerosol backscatter, extinction, depolarization and water vapour. (2) Vertical profiles of aerosol concentration and size distribution based on in-situ optical particle counter attached to a tethered balloon can now be obtained during TNA field campaigns. (3) Cloud radar calibration techniques are under development; a 3-cloud-radar inter-calibration campaign was carried out at SIRTA in July 2016, using geophysical and trihedral targets. (4) New methods have been developed for remote sensing of microphysical, radiative, and dynamical processes during fog life cycle (from aerosol activation until fog dissipation) using ceilometers, microwave radiometers and cloud radars. These new activities open new opportunities for TNA users to carry out research at SIRTA or to benefit from training opportunities.

2) The participant carried out the analysis of a radar calibration experiment using a reflective target, taking measurements of fog using the cloud radar and in-situ instruments (Optical particle counter on a tethered balloon) in his project **RFOFC,** 21 days. He studied the uncertainty of cloud radar reflectivity measurements and estimated cloud liquid water content profile and wind speed from radar measurements. This included the comparison of cloud radar cloud properties retrieval with in-situ instruments for measurement uncertainty estimation.

5.4 Puy de Dôme Observatory, PUY (CNRS, UBP)

Several TNA projects were carried out at the Puy De Dome station for the cloud microphysical probe intercomparison campaign at the PUY station in October 2016. The total access days provided so far is 47,5.

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

The Cloud microphysical probe inter-comparison campaign, took place at the PUY station from October 2nd to October 31st 2016, with 9 participating teams, among which 6 TNA projects. 16 probes were installed on the roof platform and 9 in the wind tunnel. 16 cloud events occurred and were characterized, corresponding to 193 hours of clouds between the 6th and the 26th of October (21 days of measurements).

1) INCePT (FMI, FI) The Forward Scattering Spectrometer Probe (FSSP-100) and the Cloud, Aerosol and Precipitation Spectrometer probe (DMT-CAPS) probe were evaluated against each other and against the instrumentation of the partners contributing to cloud campaign in a natural cloud environment .

2) LWC-Comp (TROPOS, DE): The Cloud Droplet Probe 2 with particle by particle feature (CDP-2), the Liquid Water Content Sensor 300 (LWC-300) and two Particle Volume Monitors 100A (PVM-100A) were evaluated. The campaign allowed to measure natural clouds in a wind tunnel with different cloud microphysical probes at the same time. So far, the campaign gave a better understanding of the new probes, CDP-2 and LWC-300, and showed how to handle these. It showed the operating limits of the LWC-300.

3) InterHOLIMO (IACS, CH): The holographic imager HOLIMO and a Fog Monitor (DMT) were installed at the PUY station. In addition, a sonic anemometer measured the wind direction to turn the Fog Monitor into the ambient wind field. The comparison of the concentration measurements and the liquid water content estimates from the new HOLIMO instrument will be used to quantify the uncertainties in the measurements as a function of the cloud properties and environmental conditions (wind speed/direction/temperature).

4) InterFOG (CNR-ISAC, IT): CNR-ISAC provided a PVM system that is the fundamental measurement system for long-term liquid water content (LWC) observations at ground-based stations. An inter-comparison with similar (or alternative) measurement systems for LWC is therefore a prerequisite to assure high-quality observations for the long term record of fog at the SPC station.

5) ACTRIS2-FIDAS (PALSA, DE): The Goal of the TNA access was to evaluate a new automatic instrumentation for cloud droplets real time analysis. This new instrument, called Fidas® 200 S, is based on TÜV certified analyzers used in long term air quality monitoring. This analyzer supplies a particle size distribution (mass and/or number) between 0.4 and 40 µm in 64 sizes channels. With two parallel running Fidas® 200 S the droplet distribution and

density of clouds was measured. One Fidas® 200 S was running without an activated aerosol drying system and therefore measured the cloud droplets.

6) UTIPEX (U. Herthfordshire): The Centre for Atmospheric and Instrumentation Research has recently developed a low-cost, miniature particle counter for use with disposable radiosondes, dropsondes, UAVs or in dense ground-based sensor networks. This Universal Cloud and Aerosol Sounding System (UCASS) is an open path optical particle counter, intended for deployment on ballon borne sounding systems, or as a dropsonde. The goal of the TNA was to evaluate the possibility of adapting this probe for a low price ground-base application, especially its robustness for long term measurements at ACTRIS stations.

5.5 Maïdo Observatory - Observatoire de Physique de l'Atmosphère à La Réunion, MAIDO-OPAR (CNRS, UR)

Three TNA projects (59 access days) have been carried out in the reporting period:

1) TNA MORGANE-MAIDO (May 2015, 14 access days):

The goal of this project was to provide high-resolution balloon measurements of temperature and water vapour to complement existing instruments at the Maïdo observatory in the framework of the MORGANE (Maïdo ObservatoRy Gas and Aerosols NDACC Experiment) campaign. Suzanne Meier (DWD, Lindenberg, Germany) was invited to participate to the campaign. She was in charge of water vapour radio soundings with the CFH (Cryogenic Frost-point Hygrometer) sonde. She trained our local staff to operate the sondes, Stéphanie Evan (OSU-R/LACy) and Jean-Marc Metzger (OSU-R/UMS). CFH data are being used for validation of the water vapour lidar data. A draft paper is in preparation (Vérèmes et al.). The measurements are also used to characterize the vertical structure of the UTLS over the Indian Ocean (work in progress).

Vérèmes H., Payen G., Keckhut P., Duflot V., Baray J.-L., Cammas J.-P., Leclair De Bellevue J., Posny F., Evan S., Metzger J.-M., Marquestaut N., Gabarrot F., Meier S., Vömel H. and Dirksen R., A Raman Lidar at Maïdo observatory (21°S,55.5°E) to monitor the water vapour up to the lower stratosphere: two years operation. In preparation for Atmos. Meas. Tech.

2) TNA FTIR-Cal-LaReunion (October 2015, 17 access days):

This project aimed at calibrating the two IFS 125HR spectrometers in operation at Maïdo observatory and at La Reunion University with the help of a well-calibrated lightweight, portable, low-resolution spectrometer - EM27/SUN. The two IFS spectrometers are labelled in the NDACC and TCCON networks. Work is still in progress to validate the calibration methodology which has the advantage to reduce the procedures for such a remote observatory in the southern hemisphere.

3) TNA AEROMARINE (March 2016, 28 access days):

The goal of this project is i) to test innovative measurement techniques with a drone and miniaturized particle counter instrument (POPS), ii) to acquire datasets on marine aerosol distribution and atmospheric thermodynamic state to further our understanding on marine aerosols and marine boundary layer, iii) to estimate the exchange of aerosols between the MBL and free troposphere. This project is also envisioned as an international collaborative effort between NOAA (USA) and OSU-Reunion and LACy laboratory. By bringing in expertise from NOAA, it will help design new strategies at Maïdo Observatory on innovative measurement techniques for future monitoring of atmospheric composition. This TNA action has promoted an exchange of expertise on aerosol measurements between NOAA scientists and OSU-Réunion scientists. OSU-Réunion, LACy and NOAA/CSD will collaborate on pursuing POPS measurements at Reunion Island.

5.6 Station for Measuring Ecosystem – Atmosphere Relations II, SMR (UHEL)

SMR TNA access illustrated the large applicability of the SMR station for multidisciplinary research and also the wide variety of science that is part of our ACTRIS activities. Three TNA projects (89 access days) have been carried out in the reporting period:

1) TNA BVOC-NPF (46 access days) included detailed trace gas measurements (A Hansel, Innsbruck, Austria) with their new PTR3 mass spectrometer. This provided novel insights into the interplay between the volatile organic compounds emitted by the biosphere and atmospheric processes, such as formation of nanoparticles.

2) TNA HCCNP (25 access days) by Z. Wang, MPI performed measurements on hygroscopicity of these nanoparticles providing new data on their chemical composition with indirect methods.

3) TNA BORCOS (18 access days), K. Maseyk, UK connected the biosphere-atmosphere interactions by looking at carbonylsulfide fluxes (COS) in the boreal environment. The hypothesis is that the COS flux is an independent measure of photosynthesis and the measurements during this TNA enabled us to probe into the ecosystem scale photosynthesis, which we can connect to the emissions of volatile compounds and aerosol formation and growth.

5.7 Pallas-Sodankylä Global Atmopheric Watch Station, PAL (FMI)

FMI hosted the TNA project ACITIC of PI Jaroslav Schwarz and his PhD student Petr Vodička: Aerosol-Cloud Interactions and their Impact on Arctic Climate as part of the Pallas Cloud Campaign, PaCE 2015, Finland (13.5 access days were provided). For this study, two months of EC/OC data, from 1st October to 1st December 2015, were taken by two EC/OC semi-online devices. Measurements covered 96% of the campaign period. The aim of the TNA was to study an earlier unexpected discrepancy of a factor of five between equivalent BC (eBC) measured by optical methods multi-angle absorption photometer (MAAP) and aethalometer and refractive BC measured by Single Particle Soot Photometer (SP2) by comparing the EC and OC measurements with results from other instruments. A comparison of the equivalent black carbon (eBC) results from aethalometer and MAAP one can determine the relevance of obtained EC measurements. Applicable EC and OC data will be used for an analysis of impact of these aerosols on Arctic climate.

5.8 High Altitude Research Station Jungfraujoch, JFJ (PSI)

1)A TNA NUCLACE-2016 was performed at the Jungfraujoch (3 access days). F. Bianchi, University of Helsinki, installed a neutral cluster air ion spectrometer (NAIS, Airel Ltd.), provided by the University of Helsinki. This instrument is able to detect aerosols below 5 nm (0.8 nm - 45 nm mobility diameter for ions and 3 - 45 nm for neutral particles). The NAIS is an ion mobility spectrometer that measures the number size distribution of ions and total (charged and neutral) particles. As the instrument will stay at the Jungfraujoch for 2 years it is premature to present results at this stage, however, interesting differences between positively and negatively charged small ions have already been observed and will be further evaluated.

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

2) CLACE-INUIT 2017, 53.5 access days, by participants from the University of Manchester (UoM) made measurements of the Microphysical parameters of the Clouds enveloping the Sphinx laboratory on the Jungfraujoch (JFJ). A suite of state-of-the-art instruments (see instrument list below for description of instruments and acronyms) was deployed, mounted on a purpose built platform capable of automatically rotating and tilting the instruments directly into the ambient wind for un-perturbed cloud sampling. The following measurements of cloud microphysical properties were made throughout the period of the experiment using : - a 3V-CPI probe, to observe the cloud particle size distributions, particle habit (derived from particle images), and hence formation of ice particles in cloud and degree of cloud glaciation; - a CDP to observe the cloud droplet size distributions (within super-cooled and mixed phase clouds) (NB; the 3V-CPI and CDP both mounted on a tilting rotating wing to direct probes into wind) a fixed position heated ultrasonic anemometer - to measure the 3-D wind vector and automatically direct cloud probes into wind; a wing mounted heated ultrasonic anemometer - to attempt measurements of cloud particle (drop and ice crystal) fluxes; a fixed position PVM - to make bulk cloud water measurements (in super-cooled and mixed phase conditions); T and RH measurements - made in vicinity of cloud microphysics/dynamics measurements The measurements of the liquid and ice phase cloud particle size distributions are to be used to calculate the cloud liquid and ice phase water contents (the former was also be measured directly); Interpretation of the combined aerosol and cloud data set (available to all) will be undertaken to identify the important ice formation mechanisms acting within the clouds.

2) For the INUIT JFJ project 2017, 32 access days, total aerosol particles and IPRs were sampled in parallel with the use of a MINI cascade impactor. The IPRs were collected behind the Ice-selective inlet (Ice-CVI). A dilution system was built to have the possibility to sample total particles for a longer time to match the duration of Ice-CVI sampling. Several different instruments for characterisation of the composition and physical properties of total aerosol, interstitial aerosol and IN. Single particles will be characterised by electron microscope (size, morphology, mixing state and chemical composition) at TU Darmstadt.

3) For FRIDGE@CLACE2017, 36 access days, ice nucleus counter FRIDGE was set up in a laboratory of the Research Station. From January 25 to February 20, 2017 atmospheric aerosol samples were collected at in the Sphinx Laboratory. Samples were collected by two independent methods from a joint total aerosol inlet as well as downstream of a counterflow virtual impactor.

For analysis of immersion freezing INP aerosol particles were collected by filtration, using membrane filters. For analysis of deposition/condensation INP particles were collected by electrostatic precipitation onto Si-wafers. At least one sample of each type was collected per day. Both types of samples were analysed in FRIDGE. Immersion freezing INP were measured at 0°C - -30°C in aqueous extracts of the filters, using the drop freezing method of Vali (1971). Deposition freezing INP were analysed between -20°C and -30°C by growing ice on the Si substrates, followed by photography and counting of the ice crystals. It is assumed that one ice crystal represents one ice nucleus.

4) INUIT-2017-MPIC, 57 access days, included instruments provided by the MPIC group included: single particle mass spectrometer ALABAMA, the aerosol mass spectrometer C-TOF AMS and additional instrumentation as a particle counter (CPC), optical particle sizers (OPC), and a Multi Angle Absorption Photometer (MAAP). During the campaign five different inlet systems were operated. The ICE-CVI (TROPOS) and the ISI (PSI) inlet were installed to select freshly produced ice particles out of mixed-phase clouds. The ALABAMA was connected to the ICE-CVI or ISI every time clouds were present around the JFJ-station. The C-ToF-AMS was connected to the ICE-CVI during a few selected cloud events. Besides of the ice selective inlets a total inlet (provided by PSI) was used most of the time for measurements with ALABAMA

5) For CLACE 2017, 30 access days, INP abundance was measured using the Horizontal Ice Nucleation Chamber (HINC). The chamber was operated at 242K and relative humidity of 94% and 104% with respect to water, respectively. The generally low concentrations of INPs in the free-troposphere, were detected by applying the new portable particle concentrator upstream of HINC. A heated particle inlet was deployed from the rooftop of the station to the laboratory, where the concentrator and HINC was located. In addition to the measurements with HINC, several other INP and aerosol instruments, which were participating the in the field project, could be attached downstream of the particle concentrator. Measurements were taken with the laser ablation single particle aerosol mass spectrometer ALABAMA (Brands et al. 2011), a second aerosol mass spectrometer (AMS, both from the Max Planck Institute for Chemistry in Mainz), the ice nucleation chamber FINCH (Bundke et al. 2008), the deposition freezing experiment FRIDGE (both University of Frankfurt), a wideband integrated bioaerosol sensor (WIBS) and the Laser Ablation of Aerosol Particles Time of Flight Mass Spectrometer (Laaptof

from KIT). Our measurements of INP concentrations are complemented by several cloud measurements, conducted by our collaborators during this field project.

6) For INUIT-CLACE-2017, 47 access days, to achieve the scientific objectives, a laser ablation single particle time of flight mass spectrometer (LAAPTOF, AeroMegt GmbH) was deployed on the Jungfraujoch station measuring single particle composition of aerosol particles or residual particles selected by the different aerosol inlets available: total (w/o particle concentrator), interstitial, Ice counter flow virtual impactor (ICE-CVI) or ice selective inlet (ISI). Furthermore, aerosol particles were collected by the KIT filter sampler setup connected to the total aerosol inlet via a vertical sampling line. With this setup, particles were collected on filters during day and night time with a frequency of two filters per day. In total 57 filters were collected covering the time period from January 24th to February 22th. After collection, the filters were stored at -20°C and at the end of the campaign they were transported back to KIT. There, the collected aerosol particles will be washed off and will be analysed for their ice nucleation behaviour with an immersion freezing method, which is similar to the Ice Spectrometer of the Colorado State University (Hiranuma et al., 2015). The aerosol mass spectrometer and the filter sampling system were installed, tested and calibrated at the Jungfraujoch in the week from January 16th to 20th, 2017 and were taken down on February 23rd, 2017. Depending on the meteorological conditions, measurements were performed sampling continuously or intermittently at the different inlets.

7) The FINCH_INUIT-JFJ 2017, 60 access days, with the fast ice nucleus chamber, FINCH. Was meant to determine the number concentration of INP under different temperature and humidity conditions, on line. Supersaturation in the chamber is reached by mixing the aerosol flow with another very cold flow (-50°C) and a moist flow. Particles enter the chamber and grow to crystals if they are ice-active. Below the chamber an optical particle counter (FINCH-OPC, self-built) detects the number and size of the grown particles (particle size is proportional to the intensity of the forward scattered light). Thus it can be derived how many of the available particles were ice active (so-called INP). Moreover the autofluorescence of the particles, which are excited with UV light, is detected - this gives information whether the INP contained biological material. During the INUIT-JFJ 2017 campaign we operated FINCH at three different inlets: - At a total inlet (operated by PSI) to sample interstitial and activated aerosol. This inlet was used for most time of the campaign. - At an Ice-CVI (counterflow virtual

impactor, operated by TROPOS; Mertes et al., 2007) to sample ice particle residuals. This inlet was used only for a few hours because particle number concentrations were too low to allow reliable INP detection with FINCH. - At a total inlet with concentrator (operated by ETH Zürich) to sample a concentrated flow of interstitial and activated aerosol. This inlet was used during the last five days of the campaign. The chamber temperature in FINCH was kept to -25°C for most of the campaign whereas the saturation ratio with respect to ice (sice) was varied between 1.1 and 1.3 to cover the humidity range below and above water saturation. Approximately once per hour sampling was done through a zero-filter for ca. 10 min to obtain the level of background noise. FINCH was operated usually only during daytime since it is an instrument that needs intensive maintenance.

8) For the project INUIT2-RP2-TROPOS, 73 access days, the high alpine research station Jungfraujoch allowed to sample ice particles in real atmospheric mixed-phased clouds and the aerosol characterization of their ice particle residuals (IPR), which are closely related to atmospheric relevant INP. Thus, the objectives were the physico-chemical characterization of IPR within natural mixed-phase clouds. The determination of the IPR properties required the coupling of the unique Ice-CVI, developed by TROPOS, with several aerosol state of the art instruments. The IPR number concentration and size distribution were measured by CPC, OPS and UHSAS. The IPR chemical composition and mixing state is obtained by single particle mass spectrometry and electron spectroscopy applied by the cooperation partners MPI Mainz and TU Darmstadt.

5.9 Cabauw Experimental Site for Atmospheric Research, CESAR (KNMI, TNO, TUD, UU, ECN)

The CEILMAX project MAX-DOAS, 28 days, inferred profile information of atmospheric absorbers from the spectral absorption along several light paths through the atmosphere. The conversion of the absorption signal to aerosol and trace gas profiles requires the inversion of the corresponding radiative transfer equation. As this process cannot be linearized, it is usually achieved by fitting the absorption measurements to the forward model results. For the aerosol profile retrieval, it is commonly suggested to use the absorption signal of an atmospheric absorber with a known vertical concentration profile, the oxygen dimer complex O4, as a tracer of the optical paths in the atmosphere. However, recent studies show that O4 absorption cross section is a significant source of uncertainty in the profile retrieval. Different retrieval methods mainly differ in the parameterization of the aerosol extinction and other aerosol parameters. Moreover, almost all retrievals assume some constant aerosol optical properties for the profile inversion which adds further uncertainty to the results. In this project, we are aiming for the development and testing of a new technique which is based on regularizing the aerosols profiles by using lidar/ceilometer observations to retrieve aerosol optical properties. In order to avoid the unknown uncertainty of the O4 absorption cross section, the retrieval technique will mainly make use of the (relative) intensities as fit parameters. This approach also provides valuable information for understanding the variation of O4.

5.10 TROPOS Research Station Melpitz, MEL (TROPOS)

1) TNA "Evaluate CALIPSO aerosol Classification product, using Airborne and ground-based IN-situ instrumentation" (ECA-IN), 7 access days, aimed at a validation exercise of CALIPSO aerosol classification product during the satellite overpass close to the TROPOS Research Station Melpitz. A direct comparison with corresponding retrievals from airborne in-situ measurements acquired during the Melpitz Column Experiment was done. For the used application, it has been shown that it is feasible to evaluate space-borne profiling measurements and aerosol typing.

2) IMAC project (30 access days): The project objectives were achieved through comprehensive intercomparison experiments with existing, well-characterized techniques for measuring rBC mass concentrations and absorption coefficients. The following instruments were included in the experiments: a single particle soot photometer (SP2 DMT), a seven-wavelength aethalometer (AE33, Magee Scientific), a multi-angle absorption photometer (MAAP, ThermoFisher Scientific), an integrating nephelometer (Aurora 4000, Ecotech) and cavity attenuated phase shift monitors with and without integrating nephelometers operating at three different wavelengths (CAPS PMex and PMssa monitors, Aerodyne). The project was split into two components. The first component was a series of laboratory tests and calibrations conducted at the TROPOS institute in Leipzig from 23 - 29 January 2017. Following this, field measurements were conducted at the Melpitz research station from 1 February to 15 March 2017.

5.11 Finokalia Atmospheric Observatory, FKL (NOA)

Five TNA projects (72 access days) have been carried out in the reporting period:

1) TNA BL-SMOG (11 access days) performed boundary layer aerosol profiling staring as close to near-surface as possible, by using the NARLa lidar receiver collocated with the NOA-PollyXT lidar. Participation in the JRA1 campaign gave the opportunity to perform spectrally dependent measurements to study absorbing aerosol smog layers that frequently occur in lowermost boundary layer over Athens during the winter season.

2) The objective of TNA LAMP (4 access days) was to estimate the ABL depth to provide NRT information on the distribution of aerosol particles and wind profiles. The ABL was be compared with the corresponding retrievals of the multi-wavelength aerosol Raman lidar PollyXT-NOA. Primary goal of the study is to demonstrate if a reliable monitoring of the boundary layer top, under different aerosol and meteorological conditions, is possible.

3) TNA DAVP-RS (21 access days) aims at validating AAI values with combined remote sensing and near surface in-situ measurements of the Athens campaign. Although it is quite difficult to use passive remote sensing data alone for determining aerosol properties, there is no ground based active remote sensing device in Turkey operating for scientific purposes currently. This project was a good starting point to develop methods for implementing passive remote sensing data to pollution studies in Turkey.

4) During FAME-16 (24 access days), portable smog chambers have been deployed for the first time to our knowledge in the field. These chambers easy to assembly and handle, can be built at a very reasonable price and allow to expose real-time atmospheric chemical substances to variable conditions to address scientifically important issues. For instance when aged organic aerosol (OA) are exposed to additional OH the following questions can be answered? Does it get more oxidized? Does it start fragmenting with mass decreases?

5) During BIOMEDS (12 access days), state-of-the-art sampling techniques and protocols developed and combined with the speciation of biological atmospheric particles (PBAPs) by

flow cytometry (FCM) were deployed for the first time to our knowledge in Europe to identify and quantify speciated bioaerosol populations.

5.12 Košetice-Křešín u Pacova, KOS (CHMI, ICPF, CVGZ)

No TNA has been provided in RP1 and RP2 upto month 23. Main reasons: (i) in the period fall 2015 – summer 2016 a complex reconstruction of the Košetice Observatory (core part of the infrastructure) was under way. This action unfortunately covered the first part of ACTRIS-2 project, but the financial sources were allocated by The Czech Ministry of Environment just at the beginning of 2015. On the other hand, the action was strongly needed after 30 years of operation of the Observatory. The process of monitoring was not influenced due to the reconstruction by any means. Now the observatory disposes of 24 beds in 12 modern equipped rooms including needed infrastructure. The observatory is now fully prepared to offer the TNA directly at the station. (ii) The head of the Department of Atmospheric Matter Fluxes and Long-range Transport, responsible for the ACTRIS implementation at the Global Change Research Institute ("third party") has been replaced (the activity of the new head will start from the beginning of October 2016). We expect that this change will bring an improvement of the communication within ACTRIS-CZ consortium. Two TNA projects are ongoing.

5.13 Izana Subtropical Access Facility, ISAF (AEMET)

1) ISAF-01-2016-AR During RP1, 1 TNA project (8 access days) was provided at Izaña Observatory. The project ISAF-1 was devoted to training, which is a very important activity (capacity building) focused on colleagues and institutions that can benefit from the expertise of ISAF staff. It has also promoted cooperation between CONICET in Argentina and the University of Valladolid, with plans to sign a collaboration agreement that is currently being prepared.

Such kind of project is also being balanced by a second type of project, "mobility of experts" (ISAF-2 project, currently on-going), in which the researchers run their own instruments at ISAF because of the unique characteristics of the Observatory, and obtain ancillary and complementary data and information provided by ISAF. Both parties benefit from enhanced scientific cooperation. The outcome of the project and cooperation plans between the World Radiation Centre, AEMET and UVA will be reported in due time.

2) PSCIZO2016 (57 access days) participated in the PMOD/WRC campaign at the Izaña Subtropical Access Facility. It was aimed at obtaining a calibration of aerosol optical depth for the standard, ultraviolet and lunar precision filter radiometers (PFR) operated within the GAW PFR global network. This calibration would also allow the traceability of measurements at the Izaña Subtropical Access Facility to become traceable to the world reference for AOD, represented by a Triad of PFR instruments stationed at the World Optical Depth Research and Calibration Center (WORCC). In addition, a spectroradiometer was operated for direct solar irradiance measurements in the range 300 to 500 nm to retrieve solar irradiance spectra and derive spectral aerosol optical depth over this wavelength range. The instruments were brought to the Izaña Subtropical Access Facility on 5 September and removed at the end of the campaign on 29 September 2016. The instruments were operated on solar trackers on the radiation platform of the Izaña Subtropical Access Facility. Measurements of solar irradiance were performed every minute for the PFR instruments, and every 20 minutes with the spectroradiometer. The measurement period covered the period 7 to 28 September 2016.

3) PICASSO-VISION (7 access days): The measurements have been done with the Engineering Model of VISION. The solar images have been recorded at specific wavelengths in the visible and near-infrared spectral domain. For ozone retrieval, observations have been made at three different wavelengths, one at 601 nm, at the centre of the Chappuis O3 absorption band, and at two wavelengths located on each side of the Chappuis band, where O3 absorption is negligible and only Rayleigh and aerosols scatterings contribute: the ratio of these wavelengths will provide the quantity of O3 present in the path. The intensity of the signal versus solar elevation will provide information about extra-terrestrial solar flux (Langley plot), as well as the atmospheric aerosol and ozone content. Moreover, the shape of the solar image, particularly at low solar elevations where it is deformed by the refraction, will provide information about the temperature profile in the atmosphere (the refraction angle is depending on the air density, which in turn depends on the temperature).

4) ISAF-04-2016-AL project (4 access days) involved the performance of the following: Practice with sunphotometers: installation of Cimel sunphotometer, configuration of ASTPwin control software, performance of daily and weekly maintenance, troubleshooting and packing.

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

It also involves introduction to calibration system in AERONET: calibration of direct sun measurements (Pre and Post-calibration) and calibration of radiance measurements in the optical calibration laboratory. - Access to measurements and derived products: AERONET products, alert system at AERONET and alert system at CAELIS not excluding data analysis, interpretation and limitation.

5.14 Granada Atmospheric Observatory, GRA (UGR)

Two TNA projects (59 access days) have been carried out at GRA in the reporting period:

1) TNA TRAMP (TRaining on Aerosol Microphysical Profiling (transfer of knowledge from ACTRIS2 to LALINET, 34 access days), focused on an intensive training to apply GRASP algorithm to sun/sky photometer and elastic lidar data acquired in our station. The training process developed successfully, opening new possibilities for the Latin American Lidar Community taking into account that the team at Sao Paulo where Dr. Lopes develop his activity is coordinating the activities of LALINET, Latin American Lidar network. Along the next months transfer of knowledge will develop in LALINET, using the different workshops and some exploratory work will develop in order to check the feasibility of microphysical retrieval using limited configurations of input data, like those typically available in some LALINET stations.

2) TNA HYGROLIRA (Study of aerosol hygroscopicity by combination of lidar and microwave radiometer, 25 access days) focused on the study the aerosol hygroscopic growth by means of remote sensing techniques, in particular using lidar and microwave measurements. During the TNA period Dr. Navas collected with the help of the Granada's personal a data set of measurements useful for this study. He implemented two methods for calibrating the lidar water vapour channel using RS measurements. In addition, he also set up an automatic algorithm to combine the water vapour profiles from the lidar and the temperature profiles from the microwave radiometer to retrieve relative humidity profiles. The aerosol hygroscopic growth has been studied by means of the enhancement factor of the backscatter coefficient. This factor combines information of aerosol and relative humidity profile. Some study cases have been analysed and compare with previous studies and main result s will be presente din the next AGU fall meeting. These studies on hygrospic growth will continue in the next months during the stay of Colombian PhD student, developing a Double PhD between la Universidad Nacional de Colombia y la Universidad de Granada. Dr. Navas will provide advice for developing an extended experimental period and for analyzing the data.

5.15 CSIC Montseny, MSY (CSIC)

During the first period, two projects were carried out at the MSY infrastructure. 40 access days were provided, accounting for 50% of the access offered.

The aims of these projects were related to the investigation of processes of formation of particles with special emphasis in the organic aerosols. These processes are relevant at the area due to the combination of high insolation and high temperatures that favour the oxidation of gaseous precursors and also enhance emissions of biogenic compounds and the formation of semi volatile compounds, increasing the concentration of ultrafine particles, mainly at midday during summer).

1) TNA UFO-AHI (36 access days) was conducted by the Laboratoire Chimie Environement (LCE) from Aix Marseille Université. During the campaign they deployed at the site state of the art instruments (PTR-ToF-MS 8000, Ionicon, and a prototype of TAG-AMS, Aerodyne Research). These methods, combined with measurement routinely carried out at the site, permitted to: characterize secondary organic aerosols (SOA) at regional and urban environments in the western Mediterranean basin in summer.

2) TNA AUFP-UHIC (4 access days) was driven by David Beddows form the National Centre for Atmospheric Sciences, from the University of Birmingham. A Particle Size Magnifier (PSM) was setup in Barcelona and Montseny sites, permitting to measure the concentration of ultrafine particles (UFP) with diameter higher than 1 nm. PSM measurements were combined with routine measurements carried out by the IDAEA group by means of SMPS instruments (TROPOS SMPS, Long DMA TSI-3080 SMPS; a short DMA TSI-3082). This set of instruments permitted to determine number concentrations and particle size spectra spanning size bins 1.25 - 478.3 nm. Nucleation events were observed using the PSM at the urban site but not at the rural background site probably because of the high loading of particulate matter observed during these days.

Not a relevant relationship between the gas and organic compounds and the formation of UFP was established during these projects. This was partially attributed to the adverse meteorological conditions. The repetition of measurements is planned for the next periods.

3) For SCOPE project (10 days) the measurements took place in the regional background station Montseny, located in a valley in the Montseny range, 40 km to the NNE of the Barcelona urban

area and 25 km from the Mediterranean coast n (41°46'45.63″N, 02°21'28.92″E, 720 m a.s.l), The Montseny (MSY) site is mostly dominated by biogenic emissions but is also affected by a large variety of emission sources: natural sources such as African dust, marine aerosols, biomass burning and urban emissions from densely populated areas along the coastline and transboundary sources from the European continent. The MSY monitoring site is equipped with: • Automatic analysers for NOx, O3, SO2 and CO • Optical particle counter for particle number and mass concentrations in different size ranges (0.4-30 µm) • Submicron particle number concentrations (>2.5nm) and size distributions (10-800 nm) • BC concentrations, absorption coefficients • Scattering and backscattering coefficients • Real-time chemical speciation of non-refractory submicron aerosol • PM10, PM2.5 and PM1 sampling, gravimetry and chemical speciation A Field OCEC analyser (Sunset Laboratory Inc.) was installed at the MSY monitoring station from September 29, 2016 to March 1, 2017. Online analysis of TOT-OCEC in PM2.5 (4h time resolution), were compared with offline TOT-OCEC applying the EUSAAR2 temperature protocol to PM2.5 (24h) samples collected with both high volume and low volume samplers. EC measurements with the Field OCEC Analyser were compared with BC from a MAAP 5012 (Thermo Scientific) and an aethalometer, model AE33 (Magee Scientific) (PM2.5). Further, offline chemical composition (PM1, PM2.5 and PM10) and Aerosol Chemical Speciation Monitor (ACSM) data (PM1) were available for comparison. The campaign also included a low volume sampler working in parallel. A denuder was used for a part of the campaign. OCEC analysis with the laboratory instrument will be performed in a selection of these filters.

The performance of the of the Sunset Semi-Continuous Field OCEC analyser using the EUSAAR2 protocol was evaluated at MSY regional background site according to the Council Directive 2008/50/EC on ambient air quality and cleaner air for Europe. Online analysis of TOT-OCEC in PM2.5 were compared with offline TOT-OCEC in PM2.5 all applying the EUSSAR2 temperature protocol. Optically obtained estimations of EC from the field OCEC analyser are compared with BC from a MAAP 5012 (Thermo Scientific) and an Aethalometer, model AE33, (Magee Scientific) already installed on site. Online measurements of OC in PM2.5 were compared with OA measurements by using an Aerosol Chemical Speciation Monitor (ACSM).

This project will provide an insight on the comparison of the online OCEC analysis method with the offline, reference method at a challenging rural environment, dominated by biogenic emissions.

5.16 Hyltemossa, HYM (ULUND)

No TNA has been provided. This is due to the fact that the access provider (ULUND) is currently in the process of moving the ACTRIS activities from our previous site (Vavihill) to co-locate with the ICOS activities at HYM (19 km NE of Vavihill). There has been unforeseen delays in erecting a self-supporting 30 m high tower for the aerosol inlets in order to get the inlets above the forest canopy. This was achieved in August 2016. All other essential installations are provided by ICOS and are already in place at the HYM site (house for instrumentation, electricity, internet etc).

5.17 Cyprus Atmospheric Observatory, CAO (CYI)

Two TNA projects have been accepted at CAO, of which one (DEPEX is still on-going in RP2), for INUIT-CYPRUS, 70 access days are reported:

1) DEPosition Intercomparison Experiment in Agia Marina Xyliatou, Cyprus (DEPEX, access days will be reported after end of the TNA in RP2): This is the first and largest intercomparison of wet/dry samplers currently deployed in world-wide atmospheric networks. This experiment will cover a full year (February 2016 to June 2017) and will also intercompare ion and metal measurements performed on-site and in different labs participating.

2) TNA INUIT-CYPRUS (70 access days). Ice Nucleation Research Unit – Cyprus INP Closure Study in April 2016 (http://www.mpic.de/forschung/partikelchemie/gruppe-schneider/projekte/inuit/inuit-cyprus-2017.html) with two main objectives: 1) a physico-chemical characterization of atmospheric ice nucleating particles (INP) in an environment where mineral dust and marine aerosol is present; and 2) a closure between INP concentrations determined experimentally and predicted by models.

5.18 Mace Head Research Station, MHD (NUIG)

No TNA has been provided. One initiative of Boundary Layer Profiling is under development and still in progress.

6 Publications and output and resulting from Transnational Access to advanced ACTRIS stations

The scientific results are only starting to be being published, since some time is required to analyse the data related to the TNA projects completed to date. Those publications resulting from ACTRIS-2 TNA or ACTRIS-1 TNA (EU FP7, 2011-2015) are summarized in Table 2: List of Transnational Access publications.

Each TNA research group benefitting from physical access to the advanced ACTRIS stations submit a scientific activity report. These reports are accessible on the ACTRIS website (http://www.actris.eu/Documentation/ACTRIS2IAinH2020(20152019)/WPdocuments/TNAOverview/Physical.aspx). The reports summarize for each TNA project the motivation for the planned project and reason for choosing the station, the scientific objectives, the method and experimental set-up, and the preliminary results and first conclusions.

Furthermore, Specific contribution to scientific output from the stations can be reported to date:

- **CMN**: The PI, E. Stopelli (NICE project), presented the preliminary project achievement in a seminary to ISAC Institute 7 months after the end of the CMN field campaign.
- **SIRTA**: The TREBOL project has enabled the PI G. de A Moreira to set up a methodology for the study of the turbulence inside the PBL using high frequency measurements by an elastic lidar. The user applied this method for analysing the structure of PBL using the backscatter as turbulent variable and observing its variation along the time.
- **MAIDO**:
    - The MORGANE-MAIDO project (May 2015) allows to validate the performances of the water vapour lidar on the range 2-22 km asl thanks to the expertise brought by the users with CFH sondes.
    - FTIR-Cal-LaReunion (October 2015): potential simplification of the calibration procedures of the two FTIR spectrometers operated at OSU-R/CNRS for providing data to NDACC and TCCON networks

    - AEROMARINE (March 2016): exchange of expertise on aerosol measurements between NOAA scientists and OSU-Réunion scientists and development of scientific perspectives
- **MELPITZ**: The ECA-IN (profiling of aerosols (including combined Lidar and near-surface activities) provides a unique dataset and the evaluation of the CALIPSA product will be feasible. Moreover, this dataset has the potential to be used in the future to optimize satellite lidar classification schemas (e.g. CATS), considering the different sets of information provided.
- **CAO**: With the objective to foster the scientific interpretation of the results obtained during the April 2016 "INUIT-BACCHUS-ACTRIS" campaign, an international workshop has been organized by the Cyprus Institute (accessible at http://www.cyi.ac.cy/index.php/apm-workshop-2016-home.html) and widely advertised (see for instance Aerosol Association in the Middle East - Northern Africa Region at http://sds-was.aemet.es/projects-research/aerosol-association-in-the-middle-east-northern-africa-region). The CyI CAO website will be regularly updated with the publications obtained in the frame of TNA.

The publications resulting from TNA to advanced ACTRIS stations are listed in Table 2. No other updates to publications have been recorded since the first periodic report in October 2016.

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

Table 2. Publications resulting from TNA 1

TNA Acronym	Authors	Title	Year of publication	Type of publication[1]	Peer-reviewed	DOI	Publication references	Open Access
AELOA_PL_RAC1-15	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Alados-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y

[1] Article in journal, Publication in conference proceeding/workshop, Book/Monograph, Chapters in book, Thesis/dissertation.

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2016	Article in journal	Y	10.5194/amt-8-3577-2015		Y
AELOA_ES_BCN1-15	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-4587-2015		

	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		Y
AELOA_DE_HPB2-15	Ina Mattis, Giuseppe D'Amico, Holger Baars, Aldo Amodeo, Fabio Madonna, Marco Iarlori	EARLINET Single Calculus Chain – technical – Part 2: Calculation of optical products	2016	Article in journal	Y	10.5194/amt-9-3009-2016		Y
	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N.	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		Y

	Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo							
	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y

	Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi							
AELOA_RO_BUC1-15	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		

	Cazacu, M.M., Tudose, O., Boscornea, A., Buzdugan, L., Timofte, A. & Nicolae, D.	Vertical and temporal variation of aerosol mass concentration at Magurele – Romania during EMEP / PEGASOS campaign	2016	Article in journal		ACCEPTED		
	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Alladus-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		

	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		

	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-3577-2015		
	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R. Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/201611919002		
	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D'Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Constantino Muñoz-Porcar, Slobodan Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		

	Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas							
AELOA_CY_CUT1_15	Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		Y
AELOA_BY_VEC1-15	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y

	Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi							
	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Allados-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y

	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-3577-2015		Y
	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D'Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Constantino Muñoz-Porcar, Slobodan Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		Y

AELOA_IT_NAP1-15	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y
	Nikolaos Papagiannopoulos, Lucia Mona, Lucas Alados-Arboledas, Vassilis Amiridis, Holger Baars, Ioannis Binietoglou, Daniele Bortoli, Giuseppe D'Amico, Aldo Giunta, Juan Luis Guerrero-Rascado, Anja Schwarz, Sergio Pereira, Nicola	CALIPSO climatological products: evaluation and suggestions from EARLINET	2016	Article in journal	Y	10.5194/acp-16-2341-2016		Y

	Spinelli, Ulla Wandinger, Xuan Wang, Gelsomina Pappalardo							
	Sara Garbarino, Alberto Sorrentino, Anna Maria Massone, Alessia Sannino, Antonella Boselli, Xuan Wang, Nicola Spinelli, Michele Piana	Expectation maximization and the retrieval of the atmospheric extinction coefficients by inversion of Raman lidar data	2016	Article in journal	Y	10.1364/OE.24.021497		Y
	Y. Zhao, A. Boselli, A. Sannino, C. Song, N. Spinelli, X. Wang	Aerosol Layering Characterization Near the Gobi Desert by a Double Polarization Lidar System	2016	Article in journal	Y	10.1051/epjconf/2016119 23032		Y
AELOA_MA_S AA1-15	Saadi, S., V. Simonneaux, et al.	Monitoring Irrigation Consumption Using High Resolution NDVI Image Time Series: Calibration and Validation in the Kairouan Plain (Tunisia	2015	Article in journal	Y	10.3390/rs71013005		
	Jarlan, L., S. Khabba, et al.	Remote Sensing of Water Resources in Semi-Arid Mediterranean Areas: the joint	2015	Article in journal	Y			

		international laboratory TREMA						
AELOA_MA_ BEN1-15	Saadi, S., V. Simonneaux, et al.	Monitoring Irrigation Consumption Using High Resolution NDVI Image Time Series: Calibration and Validation in the Kairouan Plain (Tunisia	2015	Article in journal	Y	10.3390/rs71013005		
	Jarlan, L., S. Khabba, et al.	Remote Sensing of Water Resources in Semi-Arid Mediterranean Areas: the joint international laboratory TREMA	2015	Article in journal	Y			
AELOA_GR_A TH1-15	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Allados-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y

	Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang							
	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-3577-2015		Y
	Nikolaos Papagiannopoulos, Lucia Mona, Lucas Alados-Arboledas, Vassilis Amiridis, Holger Baars, Ioannis Binietoglou, Daniele Bortoli, Giuseppe D'Amico, Aldo Giunta, Juan Luis Guerrero-Rascado, Anja Schwarz, Sergio Pereira, Nicola	CALIPSO climatological products: evaluation and suggestions from EARLINET	2016	Article in journal	Y	10.5194/acp-16-2341-2016		Y

	Spinelli, Ulla Wandinger, Xuan Wang, Gelsomina Pappalardo							
	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R. Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/201611919002		Y
	V. Amiridis, E. Marinou, A. Tsekeri, U. Wandinger, A. Schwarz, E. Giannakaki, R. Mamouri, P. Kokkalis, I. Binietoglou, S. Solomos, T. Herekakis, S. Kazadzis, E. Gerasopoulos, E. Proestakis, M. Kottas, D. Balis, A. Papayannis, C. Kontoes, K. Kourtidis, N. Papagiannopoulos, L. Mona, G. Pappalardo, O. Le Rille, A. Ansmann	LIVAS: a 3-D multi-wavelength aerosol/cloud database based on CALIPSO and EARLINET	2015	Article in journal	Y	10.5194/acp-15-7127-2015		Y
AELOA_RO_BUC1-16	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V.	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		Y

	Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo							
	Cazacu, M.M., Tudose, O., Boscornea, A., Buzdugan, L., Timofte, A. & Nicolae, D.	Vertical and temporal variation of aerosol mass concentration at Magurele – Romania during EMEP / PEGASOS campaign	2016	Article in journal		ACCEPTED		
	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Allados-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y

	De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang							
	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli,	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y

	Xuan Wang, Teresa Lo Feudo, Maria Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi							
	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-3577-2015		Y
	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R.	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/201611919002		

	Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo							
	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D'Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Constantino Muñoz-Porcar, Slobodan Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		Y
AELOA_BY_MIN1-15	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas,	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y

	Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi							
	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Allados-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y

	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-3577-2015		Y
	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D'Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Constantino Muñoz-Porcar, Slobodan Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		Y

AELOA_DE_FZJ1-16	U. Löhnert, J. H. Schween, C. Acquistapace, K. Ebell, M. Maahn, M. Barrera-Verdejo, A. Hirsikko, B. Bohn, A. Knaps, E. O'Connor, C. Simmer, A. Wahner, S. Crewell	JOYCE: Jülich Observatory for Cloud Evolution	2015	Article in journal	Y	10.1175/BAMS-D-14-00105.1		
AELOA_FHEL1-16	P. Zieger, P. P. Aalto, V. Aaltonen, M. Äijälä, J. Backman, J. Hong, M. Komppula, R. Krejci, M. Laborde, J. Lampilahti, G. de Leeuw, A. Pfüller, B. Rosati, M. Tesche, P. Tunved, R. Väänänen, T. Petäjä	Low hygroscopic scattering enhancement of boreal aerosol and the implications for a columnar optical closure study	2015	Article in journal	Y	10.5194/acp-15-7247-2015		Y
AELOA_ES_IZA1-16	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		Y
AELOA_ES_BCN2-16	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S.	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		Y

	Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo							
	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-3577-2015		Y
	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D'Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Constantino Muñoz-Porcar, Slobodan	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		Y

	Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas							
AELOA_IT_LEC1-16	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Allados-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y

	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y
	Maria Perrone, Pasquale Burlizzi, Salvatore Romano	Irradiance Impact on Pollution by Integrating Nephelometer Measurements	2015	Article in journal	Y	10.3390/atmos6121836		Y

	M. R. Perrone, P. Burlizzi	Mediterranean aerosol typing by integrating three-wavelength lidar and sun photometer measurements	2016	Article in journal	Y	10.1007/s11356-016-6575-7		Y
	Romano, S., Perrone, M.R.	Impact of desert dust events on short- and long-wave radiation at the surface over south-eastern Italy.	2016	Article in journal		10.1007/s12517-015-2204-x.		
	S. Romano, P. Burlizzi, M.R. Perrone	Experimental determination of short- and long-wave dust radiative effects in the Central Mediterranean and comparison with model results	2016	Article in journal	Y	10.1016/j.atmosres.2015.11.019		Y
	Salvatore Romano, Maria Rita Perrone	Mineral Dust Impact on Short- and Long-Wave Radiation and Comparison with Ceres Measurements	2016	Article in journal	Y	10.1051/epjconf/201611908005		Y
	Maria Rita Perrone, Pasquale Burlizzi	Aerosol Typing by 3-Wavelength Elastic Lidar Signals Over the Central Mediterranean	2016	Article in journal	Y	10.1051/epjconf/201611923008		Y

	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-3577-2015		Y
	M. R. Perrone, S. Romano, J. A. G. Orza	Columnar and ground-level aerosol optical properties: sensitivity to the transboundary pollution, daily and weekly patterns, and relationships	2015	Article in journal	Y	10.1007/s11356-015-4850-7		
	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R. Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/201611919002		Y

AEGOA_ES_GRA1-15	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		Y
	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas,	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y

	Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi							
	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-3577-2015		Y

	Nikolaos Papagiannopoulos, Lucia Mona, Lucas Alados-Arboledas, Vassilis Amiridis, Holger Baars, Ioannis Binietoglou, Daniele Bortoli, Giuseppe D'Amico, Aldo Giunta, Juan Luis Guerrero-Rascado, Anja Schwarz, Sergio Pereira, Nicola Spinelli, Ulla Wandinger, Xuan Wang, Gelsomina Pappalardo	CALIPSO climatological products: evaluation and suggestions from EARLINET	2016	Article in journal	Y	10.5194/acp-16-2341-2016		Y
	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R. Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/201611919002		Y
	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D’Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Constantino Muñoz-Porcar, Slobodan Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		Y

	D. Pérez-Ramírez, I. Veselovskii, D. N. Whiteman, A. Suvorina, M. Korenskiy, A. Kolgotin, B. Holben, O. Dubovik, A. Siniuk, L. Alados-Arboledas	High temporal resolution estimates of columnar aerosol microphysical parameters from spectrum of aerosol optical depth by linear estimation: application to long-term AERONET and star-photometry measurements	2015	Article in journal	Y	10.5194/amt-8-3117-2015		Y
	Juan Antonio Bravo-Aranda, Gloria Titos, MarÍa José Granados-Muñoz, Juan LuÍs Guerrero-Rascado, Fransciso Navas-Guzmán, Antonio Valenzuela, Hassan Lyamani, Francisco José Olmo, Javier Andrey, Lucas Alados-Arboledas	Study of mineral dust entrainment in the planetary boundary layer by lidar depolarisation technique	2015	Article in journal	Y	10.3402/tellusb.v67.26180		Y
AELOA_FHEL 1-15	P. Zieger, P. P. Aalto, V. Aaltonen, M. Äijälä, J. Backman, J. Hong, M. Komppula, R. Krejci, M. Laborde, J. Lampilahti, G. de Leeuw, A. Pfüller, B. Rosati, M. Tesche, P. Tunved, R. Väänänen, T. Petäjä	Low hygroscopic scattering enhancement of boreal aerosol and the implications for a columnar optical closure study	2015	Article in journal	Y	10.5194/acp-15-7247-2015		Y

AEGOA_ES_MAL1-16	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		Y
	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas,	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y

	Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi							
	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-3577-2015		Y

	Nikolaos Papagiannopoulos, Lucia Mona, Lucas Alados-Arboledas, Vassilis Amiridis, Holger Baars, Ioannis Binietoglou, Daniele Bortoli, Giuseppe D'Amico, Aldo Giunta, Juan Luis Guerrero-Rascado, Anja Schwarz, Sergio Pereira, Nicola Spinelli, Ulla Wandinger, Xuan Wang, Gelsomina Pappalardo	CALIPSO climatological products: evaluation and suggestions from EARLINET	2016	Article in journal	Y	10.5194/acp-16-2341-2016		Y
	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R. Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/201611919002		Y
	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D'Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Constantino Muñoz-Porcar, Slobodan Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		Y

	D. Pérez-Ramírez, I. Veselovskii, D. N. Whiteman, A. Suvorina, M. Korenskiy, A. Kolgotin, B. Holben, O. Dubovik, A. Siniuk, L. Alados-Arboledas	High temporal resolution estimates of columnar aerosol microphysical parameters from spectrum of aerosol optical depth by linear estimation: application to long-term AERONET and star-photometry measurements	2015	Article in journal	Y	10.5194/amt-8-3117-2015		Y
	Juan Antonio Bravo-Aranda, Gloria Titos, MarÍa José Granados-Muñoz, Juan LuÍs Guerrero-Rascado, Fransciso Navas-Guzmán, Antonio Valenzuela, Hassan Lyamani, Francisco José Olmo, Javier Andrey, Lucas Alados-Arboledas	Study of mineral dust entrainment in the planetary boundary layer by lidar depolarisation technique	2015	Article in journal	Y	10.3402/tellusb.v67.26180		Y
AELOA_DE_HOH1-15	Ina Mattis, Giuseppe D'Amico, Holger Baars, Aldo Amodeo, Fabio Madonna, Marco Iarlori	EARLINET Single Calculus Chain – technical – Part 2: Calculation of optical products	2016	Article in journal	Y	10.5194/amt-9-3009-2016		Y
	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F.	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		Y

	Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo							
	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y

	Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi							
AEGOA_FI_HYY1-16	P. Zieger, P. P. Aalto, V. Aaltonen, M. Äijälä, J. Backman, J. Hong, M. Komppula, R. Krejci, M. Laborde, J. Lampilahti, G. de Leeuw, A. Pfüller, B. Rosati, M. Tesche, P. Tunved, R. Väänänen, T. Petäjä	Low hygroscopic scattering enhancement of boreal aerosol and the implications for a columnar optical closure study	2015	Article in journal	Y	10.5194/acp-15-7247-2015		Y
AEGOA_FI_HEL1-16	P. Zieger, P. P. Aalto, V. Aaltonen, M. Äijälä, J. Backman, J. Hong, M. Komppula, R. Krejci, M. Laborde, J. Lampilahti, G. de Leeuw, A. Pfüller, B. Rosati, M. Tesche, P. Tunved, R. Väänänen, T. Petäjä	Low hygroscopic scattering enhancement of boreal aerosol and the implications for a columnar optical closure study	2015	Article in journal	Y	10.5194/acp-15-7247-2015		Y

AEGOA_FI_HAD1-16	P. Zieger, P. P. Aalto, V. Aaltonen, M. Äijälä, J. Backman, J. Hong, M. Komppula, R. Krejci, M. Laborde, J. Lampilahti, G. de Leeuw, A. Pfüller, B. Rosati, M. Tesche, P. Tunved, R. Väänänen, T. Petäjä	Low hygroscopic scattering enhancement of boreal aerosol and the implications for a columnar optical closure study	2015	Article in journal	Y	10.5194/acp-15-7247-2015		Y
AELOA_GR_THE1-16	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira, M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2015	Article in journal	Y	10.5194/amt-8-3577-2015		Y
	V. Amiridis, E. Marinou, A. Tsekeri, U. Wandinger, A. Schwarz, E. Giannakaki, R. Mamouri, P. Kokkalis, I. Binietoglou, S. Solomos, T. Herekakis, S. Kazadzis, E. Gerasopoulos, E. Proestakis, M. Kottas, D. Balis, A. Papayannis, C. Kontoes, K. Kourtidis, N. Papagiannopoulos, L. Mona, G. Pappalardo, O. Le Rille, A. Ansmann	LIVAS: a 3-D multi-wavelength aerosol/cloud database based on CALIPSO and EARLINET	2015	Article in journal	Y	10.5194/acp-15-7127-2015		Y

	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R. Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/201611919002		Y
AEIZA_FR_LIL3-15	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Allados-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y
AEIZA_SP_VAL1-15	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		

	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		Y
	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		Y

AEIZA_SP_VAL2-15	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		Y
	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		Y
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		Y

	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		Y
AEIZA_SP_VAL3-15	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		Y
	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		Y

	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		Y
	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		Y
AEIZA_SP_VAL4-15	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		Y

	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		Y
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		Y
	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		Y

AEIZA_CH_BEI1_16	K. T. Li, Z. Q. Li, D. H. Li, W. Li, L. Blarel, P. Goloub, T. Benjamin, H. Xu, Y. S. Xie, W. Z. Hou, L. Li, X. F. Chen.	Transfer method to calibrate the normalized radiance for a CE318 Sun/sky radiometer.	2015	Article in journal	Y	10.3788/COL201513.041001		Y
	Z. Q. Li, L. Li, F. X. Zhang, D. H. Li, Y. S. Xie, H. Xu.	Comparison of aerosol properties over Beijing and Kanpur: Optical, physical properties and aerosol component composition retrieved from 12 years ground-based Sun-sky radiometer remote sensing data	2015	Article in journal	Y	10.1002/2014JD022593		Y
	Z. Q. Li, D. H. Li, K. T. Li, H. Xu, X. F. Chen, C. Chen, Y. S. Xie, L. Li, L. Li, W. Li, Y. Lv, L. L. Qie, Y. Zhang, X. F. Gu.	Sun-sky radiometer observation network with the extension of multi-wavelength polarization measurements	2015	Article in journal		10.11834/jrs.20154129		

	Y. Ma, Z. Q. Li, Y. S. Xie, Q. Fu, Y. Zhang, H. Xu, K. T. Li.	Validation of MODIS Aerosol Optical Depth Retrieval over Mountains in Central China Based on a Sun-Sky Radiometer Site of SONET	2016	Article in journal		10.3390/rs8020111		
	Y. S. Xie, Z. Q. Li, D. H. Li,L. Li, H. Xu, K. T. Li.	Aerosol Optical and Microphysical Properties of Four Typical Sites of SONET in China Based on Remote Sensing Measurements.	2015	Article in journal		10.3390/rs70809928		
	LI Zhengqiang, Kaitao LI, Donghui LI, Jiuchun Yang, Hua XU, Philippe Goloub, Stephane Victori,A	A simple transfer calibration method for CIMEL Sun-Moon photometer: calculating lunar calibration coefficients from Sun calibration constants	2016	Article in journal		ACCEPTED		

AEIZA_FR_LIL3-16	LI Zhengqiang, Kaitao LI, Donghui LI, Jiuchun Yang, Hua XU, Philippe Goloub, Stephane Victori,A	A simple transfer calibration method for CIMEL Sun-Moon photometer: calculating lunar calibration coefficients from Sun calibration constants	2016	Article in journal		ACCEPTED		
	Chaikovsky, A., Dubovik, O., Holben, B., Bril, A., Goloub, P., Tanre; D., Pappalardo, G., Wandinger, U., Chaikovskaya, L., Denisov, S., Grudo, J., Lopatin, A., Karol, Y., Lapyonok, T., Amiridis, V., Ansmann, A., Apituley, A., Allados-Arboledas, L., Binietoglou, I., Boselli, A., D'Amico, G., Freudenthaler, V., Giles, D., Granados-Muñoz, M. J., Kokkalis, P., Nicolae, D., Oshchepkov, S., Papayannis, A., Perrone, M. R., Pietruczuk, A., Rocadenbosch, F., Sicard, M., Slutsker, I., Talianu, C., De Tomasi, F., Tsekeri, A., Wagner, J., and Wang, X.	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y
AEIZA_FR_LIL7-16	Bovchaliuk, P. Goloub, T. Podvin, I. Veselovskii, D. Tanre, A. Chaikovsky, O. Dubovik, A. Mortier, A. Lopatin, M. Korenskiy, and S. Victori	Comparison of aerosol properties retrieved using GARRLiC, LIRIC, and Raman algorithms applied to multi-wavelength LIDAR and sun/sky-photometer data	2016	Article in journal	Y	10.5194/amt-9-3391-2016		Y

	Mortier A., P. Goloub, Y. Derimian, D. Tanré , T. Podvin , L. Blarel , C. Deroo , B. Marticorena , A. Diallo , T. Ndiaye	Climatology of aerosol properties and radiative effect using Lidar and Sunphotometer observations in the Dakar site	2016	Article in journal	Y	10.1002/2015JD024588		Y
	Veselovskii, P. Goloub, T. Podvin, V. Bovchaliuk, Y. Derimian, P. Augustin, M. Fourmentin, D. Tanre, M. Korenskiy, D. N. Whiteman, A. Diallo, T. Ndiaye, A. Kolgotin, O. Dubovik	Study of African Dust with multi-wavelength Raman LiDAR during the « SHADOW » Campaign in Senegal	2016	Article in journal	Y	10.5194/acp-16-7013-2016		Y
AEIZA_SP_VAL1-16	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		Y

	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		Y
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		Y
	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		Y

AEIZA_SP_VAL2-16	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		Y	
	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		Y	
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		Y	

	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		Y	
AEIZA_SP_VAL3-16	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		Y	
	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		Y	

	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		Y
	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		Y
AEIZA_SP_VAL4-16	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		Y

	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		Y
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		Y
	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		Y

AEIZA_SP_VAL5-16	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		Y
	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		Y
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		Y

	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		Y
AEIZA_SP_VAL6-16	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		
	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		

	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		
AEIZA_SP_VAL7-16	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		
	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		

	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		
AEIZA_FR_VAL8-16	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		
	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		

	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		
AEIZA_SP_VAL9-16	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2016	Article in journal	Y	10.1002/joc.4031		
	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		
	D. Mateos, V.E. Cachorro, C. Toledano, M.A. Burgos, Y. Bennouna, B. Torres, D. Fuertes, R. González, C. Guirado, A. Calle, A.M. de Frutos	Columnar and surface aerosol load over the Iberian Peninsula establishing annual cycles, trends, and relationships in five geographical sectors	2015	Article in journal	Y	10.1016/j.scitotenv.2015.03.002		

	S. Groß, V. Freudenthaler, K. Schepanski, C. Toledano, A. Schäfler, A. Ansmann, B. Weinzierl	Optical properties of long-range transported Saharan dust over Barbados as measured by dual-wavelength depolarization Raman lidar measurements	2015	Article in journal	Y	10.5194/acp-15-11067-2015		
AELOA_GR_ATH1-16	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Allados-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y
	Nikolaos Papagiannopoulos, Lucia Mona, Lucas Alados-Arboledas, Vassilis Amiridis, Holger Baars, Ioannis Binietoglou, Daniele Bortoli, Giuseppe D'Amico, Aldo Giunta, Juan Luis Guerrero-Rascado,	CALIPSO climatological products: evaluation and suggestions from EARLINET	2016	Article in journal	Y	10.5194/acp-16-2341-2016		Y

	Anja Schwarz, Sergio Pereira, Nicola Spinelli, Ulla Wandinger, Xuan Wang, Gelsomina Pappalardo							
AELOA_PL_RAC1-16	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Allados-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y
	I. Binietoglou, S. Basart, L. Alados-Arboledas, V. Amiridis, A. Argyrouli, H. Baars, J. M. Baldasano, D. Balis, L. Belegante, J. A. Bravo-Aranda, P. Burlizzi, V. Carrasco, A. Chaikovsky, A. Comerón, G. D'Amico, M. Filioglou, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Ilic, P. Kokkalis, A. Maurizi, L. Mona, F. Monti, C. Muñoz-Porcar, D. Nicolae, A. Papayannis, G. Pappalardo, G. Pejanovic, S. N. Pereira,	A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals	2016	Article in journal	Y	10.5194/amt-8-3577-2015		Y

	M. R. Perrone, A. Pietruczuk, M. Posyniak, F. Rocadenbosch, A. Rodríguez-Gómez, M. Sicard, N. Siomos, A. Szkop, E. Terradellas, A. Tsekeri, A. Vukovic, U. Wandinger, J. Wagner							
AELOA_UK_VAN1-16	V. Estellés, F. Marenco, C. Ryder, S. Segura, J. Buxmann, M. Campanelli, M.P. Utrillas	The Sunphotometer Airborne Validation Experiment in Dust (SAVEX-D): a comparison of AERONET and ESR/SKYNET inversions with airborne in-situ measurements	2016	International SKYNET workshop, Rome (Italy), March 2-4 2016				
AELOA_IT_POT1-16	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi,	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		Y

	F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo							
	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y

	Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi							
	Nikolaos Papagiannopoulos, Lucia Mona, Lucas Alados-Arboledas, Vassilis Amiridis, Holger Baars, Ioannis Binietoglou, Daniele Bortoli, Giuseppe D'Amico, Aldo Giunta, Juan Luis Guerrero-Rascado, Anja Schwarz, Sergio Pereira, Nicola Spinelli, Ulla Wandinger, Xuan Wang, Gelsomina Pappalardo	CALIPSO climatological products: evaluation and suggestions from EARLINET	2016	Article in journal	Y	10.5194/acp-16-2341-2016		Y
	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R. Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/201611919002		Y
	V. Amiridis, E. Marinou, A. Tsekeri, U. Wandinger, A. Schwarz, E. Giannakaki, R. Mamouri, P. Kokkalis, I. Binietoglou, S. Solomos, T. Herekakis, S. Kazadzis, E. Gerasopoulos, E. Proestakis, M. Kottas, D. Balis, A.	LIVAS: a 3-D multi-wavelength aerosol/cloud database based on CALIPSO and EARLINET	2015	Article in journal	Y	10.5194/acp-15-7127-2015		Y

	Papayannis, C. Kontoes, K. Kourtidis, N. Papagiannopoulos, L. Mona, G. Pappalardo, O. Le Rille, A. Ansmann							
	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D'Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Consta ntino Muñoz-Porcar, Slobodan Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		Y

AELOA_IT_NAP1-16	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D’Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y

	Anatoli Chaikovsky, Oleg Dubovik, Brent Holben, Andrey Bril, Philippe Goloub, Didier Tanré, Gelsomina Pappalardo, Ulla Wandinger, Ludmila Chaikovskaya, Sergey Denisov, Jan Grudo, Anton Lopatin, Yana Karol, Tatsiana Lapyonok, Vassilis Amiridis, Albert Ansmann, Arnoud Apituley, Lucas Allados-Arboledas, Ioannis Binietoglou, Antonella Boselli, Giuseppe D'Amico, Volker Freudenthaler, David Giles, María José Granados-Muñoz, Panayotis Kokkalis, Doina Nicolae, Sergey Oshchepkov, Alex Papayannis, Maria Rita Perrone, Alexander Pietruczuk, Francesc Rocadenbosch, Michaël Sicard, Ilya Slutsker, Camelia Talianu, Ferdinando De Tomasi, Alexandra Tsekeri, Janet Wagner, Xuan Wang	Lidar-Radiometer Inversion Code (LIRIC) for the retrieval of vertical aerosol properties from combined lidar/radiometer data: development and distribution in EARLINET	2016	Article in journal	Y	10.5194/amt-9-1181-2016		Y
	Sara Garbarino, Alberto Sorrentino, Anna Maria Massone, Alessia Sannino, Antonella Boselli, Xuan Wang, Nicola Spinelli, Michele Piana	Expectation maximization and the retrieval of the atmospheric extinction coefficients by inversion of Raman lidar data	2016	Article in journal	Y	10.1364/OE.24.021497		Y
	Y. Zhao, A. Boselli, A. Sannino, C. Song, N. Spinelli, X. Wang	Aerosol Layering Characterization Near the Gobi Desert by a Double Polarization Lidar System	2016	Article in journal	Y	10.1051/epjconf/201611923032		Y

AELOA_RO_CLU1-16	Cazacu, M.M., Tudose, O., Boscornea, A., Buzdugan, L., Timofte, A. & Nicolae, D.	Vertical and temporal variation of aerosol mass concentration at Magurele – Romania during EMEP / PEGASOS campaign	2016	Article in journal		Accepted		
	Cazacu, M.M., Tudose, O.G., Timofte, A., Rusu, O., Apostol, L., Leontie, L. & Gurlui, S.	A case study of the behavior of aerosol optical properties under the incidence of a Saharan dust intrusion event	2016	Article in journal		Applied ecology and environmental research. 14 (3), 183–194		
AEGOA_ES_TEI1-16	R. D. García, V. E. Cachorro, E. Cuevas, C. Toledano, A. Redondas, M. Blumthaler, Y. Benounna	Comparison of measured and modelled spectral UV irradiance at Izaña high mountain station: estimation of the underlying effective albedo	2016	Article in journal	Y	10.1002/joc.4355		Y
AEGOA_ES_ALB1-16	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D.	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		Y

	Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo							
	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		Y

	Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi							
	Nikolaos Papagiannopoulos, Lucia Mona, Lucas Alados-Arboledas, Vassilis Amiridis, Holger Baars, Ioannis Binietoglou, Daniele Bortoli, Giuseppe D'Amico, Aldo Giunta, Juan Luis Guerrero-Rascado, Anja Schwarz, Sergio Pereira, Nicola Spinelli, Ulla Wandinger, Xuan Wang, Gelsomina Pappalardo	CALIPSO climatological products: evaluation and suggestions from EARLINET	2016	Article in journal	Y	10.5194/acp-16-2341-2016		Y
	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R. Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/2016119 19002		Y

	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D'Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Constantino Muñoz-Porcar, Slobodan Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		Y
	Juan Antonio Bravo-Aranda, Gloria Titos, MarÍa José Granados-Muñoz, Juan LuÍs Guerrero-Rascado, Fransciso Navas-Guzmán, Antonio Valenzuela, Hassan Lyamani, Francisco José Olmo, Javier Andrey, Lucas Alados-Arboledas	Study of mineral dust entrainment in the planetary boundary layer by lidar depolarisation technique	2015	Article in journal	Y	10.3402/tellusb.v67.26180		Y

	D. Pérez-Ramírez, I. Veselovskii, D. N. Whiteman, A. Suvorina, M. Korenskiy, A. Kolgotin, B. Holben, O. Dubovik, A. Siniuk, L. Alados-Arboledas	High temporal resolution estimates of columnar aerosol microphysical parameters from spectrum of aerosol optical depth by linear estimation: application to long-term AERONET and star-photometry measurements	2015	Article in journal	Y	10.5194/amt-8-3117-2015		Y
AEGOA_ES_MAL2-16	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V. Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		

	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		
	Nikolaos Papagiannopoulos, Lucia Mona, Lucas Alados-Arboledas, Vassilis Amiridis, Holger Baars, Ioannis Binietoglou, Daniele Bortoli, Giuseppe D'Amico, Aldo Giunta, Juan Luis Guerrero-Rascado, Anja Schwarz, Sergio Pereira, Nicola	CALIPSO climatological products: evaluation and suggestions from EARLINET	2016	Article in journal	Y	10.5194/acp-16-2341-2016		

	Spinelli, Ulla Wandinger, Xuan Wang, Gelsomina Pappalardo							
	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R. Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/201611919002		
	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D'Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Constantino Muñoz-Porcar, Slobodan Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		
	Juan Antonio Bravo-Aranda, Gloria Titos, MarÍa José Granados-Muñoz, Juan LuÍs Guerrero-Rascado, Fransciso Navas-Guzmán, Antonio Valenzuela, Hassan Lyamani, Francisco José Olmo, Javier Andrey, Lucas Alados-Arboledas	Study of mineral dust entrainment in the planetary boundary layer by lidar depolarisation technique	2015	Article in journal	Y	10.3402/tellusb.v67.26180		

	D. Pérez-Ramírez, I. Veselovskii, D. N. Whiteman, A. Suvorina, M. Korenskiy, A. Kolgotin, B. Holben, O. Dubovik, A. Siniuk, L. Alados-Arboledas	High temporal resolution estimates of columnar aerosol microphysical parameters from spectrum of aerosol optical depth by linear estimation: application to long-term AERONET and star-photometry measurements	2015	Article in journal	Y	10.5194/amt-8-3117-2015		
AEGOA_ES_BAD1-16	M. A. Obregón, A. Serrano, M. L. Cancillo, V. E. Cachorro, C. Toledano	Aerosol radiometric properties at Western Spain (Cáceres station)	2015	Article in journal	Y	10.1002/joc.4031		Y
AEGOA_ES_GRA1-16	M. Sicard, G. D'Amico, A. Comerón, L. Mona, L. Alados-Arboledas, A. Amodeo, H. Baars, J. M. Baldasano, L. Belegante, I. Binietoglou, J. A. Bravo-Aranda, A. J. Fernández, P. Fréville, D. García-Vizcaíno, A. Giunta, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, D. Hadjimitsis, A. Haefele, M. Hervo, M. Iarlori, P. Kokkalis, D. Lange, R. E. Mamouri, I. Mattis, F. Molero, N. Montoux, A. Muñoz, C. Muñoz Porcar, F. Navas-Guzmán, D. Nicolae, A. Nisantzi, N. Papagiannopoulos, A. Papayannis, S. Pereira, J. Preißler, M. Pujadas, V. Rizi, F. Rocadenbosch, K. Sellegri, V.	EARLINET: potential operationality of a research network	2015	Article in journal	Y	10.5194/amt-8-4587-2015		

	Simeonov, G. Tsaknakis, F. Wagner, G. Pappalardo							
	Ulla Wandinger, Volker Freudenthaler, Holger Baars, Aldo Amodeo, Ronny Engelmann, Ina Mattis, Silke Groß, Gelsomina Pappalardo, Aldo Giunta, Giuseppe D'Amico, Anatoli Chaikovsky, Fiodor Osipenko, Alexander Slesar, Doina Nicolae, Livio Belegante, Camelia Talianu, Ilya Serikov, Holger Linné, Friedhelm Jansen, Arnoud Apituley, Keith M. Wilson, Martin de Graaf, Thomas Trickl, Helmut Giehl, Mariana Adam, Adolfo Comerón, Constantino Muñoz-Porcar, Francesc Rocadenbosch, Michaël Sicard, Sergio Tomás, Diego Lange, Dhiraj Kumar, Manuel Pujadas, Francisco Molero, Alfonso J. Fernández, Lucas Alados-Arboledas, Juan Antonio Bravo-Aranda, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, María José Granados-Muñoz, Jana Preißler, Frank Wagner, Michael Gausa, Ivan Grigorov, Dimitar Stoyanov, Marco Iarlori, Vincenco Rizi, Nicola Spinelli, Antonella Boselli, Xuan Wang, Teresa Lo Feudo, Maria	EARLINET instrument intercomparison campaigns: overview on strategy and results	2016	Article in journal	Y	10.5194/amt-9-1001-2016		

	Rita Perrone, Ferdinando De Tomasi, Pasquale Burlizzi							
	Nikolaos Papagiannopoulos, Lucia Mona, Lucas Alados-Arboledas, Vassilis Amiridis, Holger Baars, Ioannis Binietoglou, Daniele Bortoli, Giuseppe D'Amico, Aldo Giunta, Juan Luis Guerrero-Rascado, Anja Schwarz, Sergio Pereira, Nicola Spinelli, Ulla Wandinger, Xuan Wang, Gelsomina Pappalardo	CALIPSO climatological products: evaluation and suggestions from EARLINET	2016	Article in journal	Y	10.5194/acp-16-2341-2016		
	L. Mona, L. Alados Arboledas, V. Amiridis, A. Amodeo, A. Apituley, D. Balis, A. Comeron, M. Iarlori, H. Linné, D. Nicolae, A. Papayannis, M.R. Perrone, V. Rizi, N. Siomos, U. Wandinger, X. Wang, G. Pappalardo	EARLINET: 12-year of Aerosol Profiling over Europe	2016	Article in journal	Y	10.1051/epjconf/2016119 19002		

	María José Granados-Muñoz, Francisco Navas-Guzmán, Juan Luis Guerrero-Rascado, Juan Antonio Bravo-Aranda, Ioannis Binietoglou, Sergio Nepomuceno Pereira, Sara Basart, José María Baldasano, Livio Belegante, Anatoli Chaikovsky, Adolfo Comerón, Giuseppe D'Amico, Oleg Dubovik, Luka Ilic, Panos Kokkalis, Constantino Muñoz-Porcar, Slobodan Nickovic, Doina Nicolae, Francisco José Olmo, Alexander Papayannis, Gelsomina Pappalardo, Alejandro Rodríguez, Kerstin Schepanski, Michaël Sicard, Ana Vukovic, Ulla Wandinger, François Dulac, Lucas Alados-Arboledas	Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012 ChArMEx/EMEP campaign	2016	Article in journal	Y	10.5194/acp-16-7043-2016		
	Juan Antonio Bravo-Aranda, Gloria Titos, MarÍa José Granados-Muñoz, Juan LuÍs Guerrero-Rascado, Fransciso Navas-Guzmán, Antonio Valenzuela, Hassan Lyamani, Francisco José Olmo, Javier Andrey, Lucas Alados-Arboledas	Study of mineral dust entrainment in the planetary boundary layer by lidar depolarisation technique	2015	Article in journal	Y	10.3402/tellusb.v67.26180		
	D. Pérez-Ramírez, I. Veselovskii, D. N. Whiteman, A. Suvorina, M. Korenskiy, A. Kolgotin, B. Holben, O. Dubovik, A. Siniuk, L. Alados-Arboledas	High temporal resolution estimates of columnar aerosol microphysical parameters from spectrum of aerosol optical depth by linear estimation: application to long-term AERONET and star-	2015	Article in journal	Y	10.5194/amt-8-3117-2015		

		photometry measurements						
MORGANE-MAIDO	Vérèmes H., Payen G., Keckhut P., Duflot V., Baray J.-L., Cammas J.-P., Leclair De Bellevue J., Posny F., Evan S., Metzger J.-M., Marquestaut N., Gabarrot F., Meier S., Vömel H. and Dirksen R.,	A Raman Lidar at Maïdo observatory (21°S,55.5°E) to monitor the water vapor up to the lower stratosphere: two years operation	Draft paper in preparati on	Atmos-pheric Measure-ments Technolog y	Y			Y
MICROLIRA	Lolli et al.	Lidar Retrieval Impact on Fu-Liou-Gu Radiative Transfer Model	2016	Conference Proceeding s	Y			Y
ACITIC	D. Brus, K. Doulgeris, K. Neitola, J. Backman, E. J. O'connor, M. Komppula, M. Filioglou, K. A. Nicoll, R. G. Harrison, P. Tisler, J. Schwarz, P. Vodicka, V. Vakkari, M. Aurela, E. Asmi And H. Lihavainen	Overview of pallas cloud experiment, pace 2015, The 2nd Pan-Eurasian Experiment (PEEX) Science Conference & The 6th PEEX Meeting, Beijing, China	2016	Conference Proceeding s	N			Y
NUCLACE-2016	F. Bianchi, J. Tröstl, H. Junninen, C. Frege, S. Henne, C.R. Hoyle, U. Molteni, E. Herrmann, A. Adamov, N. Bukowiecki, X. Chen, J. Duplissy, M.	New particle formation in the free troposphere: A question of	2016	Article in journal	Y	10.1126/science.aad5456		Y

	Gysel, M. Hutterli, J. Kangasluoma, J. Kontkanen, A. Kürten, H.E. Manninen, S. Münch, O. Peräkylä, T. Petäjä, L. Rondo, C. Williamson, E. Weingartner, J. Curtius, D.R. Worsnop, M. Kulmala, J. Dommen, U. Baltensperger	chemistry and timing						
SCOPE	Querol, X., Gangoiti, G., Mantilla, E., Alastuey, A., Minguillón, M. C., Amato, F., Reche, C., Viana, M., Moreno, T., Karanasiou, A., Rivas, I., Pérez, N., Ripoll, A., Brines, M., Ealo, M., Pandolfi, M., Lee, H.-K., Eun, H.-R., Park, Y.-H., Escudero, M., Beddows, D., Harrison, R. M., Bertrand, A., Marchand, N., Lyasota, A., Codina, B., Olid, M., Udina, M., Jiménez-Esteve, B., Soler, M. R., Alonso, L., Millán, M. and Ahn, K.-H	Phenomenology of high-ozone episodes in NE Spain	2017	Article in Journal	yes	10.5194/acp-17-2817-2017, 2017.		Yes
ACTRIS FP7 related:								
5 TNA projects at SMR: - SACS-BAECC 2014 - POLLY-XT at BEACC - TOTAL DETECTION - MOVING - BAECC ERI	Petäjä, T., O'Connor, E. J., Moisseev, D., Sinclair, V. A., Manninen, A. J., Väänänen, R., von Lerber, A., Thornton, J. A., Nicoll, K., Petersen, W., Chandrasekar, V. , Smith, J. N., Winkler, P. M., Kruger, O., Hakola, H., Timonen, H., Brus, D., Laurila, T., Asmi, E., Riekkola, M.-L., Mona, L., Massoli, P., Engelmann, R., Komppula, M., Wang, J., Kuang, C., Bäck, J., Virtanen, A., Levula, J., Ritsche, M. T. and Hickmon, N.	BAECC: a field campaign to elucidate the impact of Biogenic Aerosols on Clouds and Climate	2016	Article in journal	Y	10.1175/BAMS-D-14-00199.1	ISSN 1520-0477	Y

7 Overview of Transnational Access projects to advanced ACTRIS stations supported

Table 3. Overview of TNA

#	Acronym	Title	RP	Amount of Access	Objectives	Description of Work
				1069, 5		
MEL2	ECA-IN	Evaluate CALIPSO aerosol Classification product, using Airborne and ground-based IN-situ instrumentation	RP1	7	Identification and classification of aerosol types is important, since different aerosol types have different effects on climate, visibility and health. The space-borne lidar CALIOP on-board the CALIPSO satellite (Winker et al., 2009), provides information on layer-stratified types of aerosol that can be detected with this instrument. The CALIPSO Vertical Feature Mask (VFM) product (Vaughan et al. 2009), classifies aerosols and clouds based on their optical properties. Furthermore, the lidar satellite CATS, with more measuring capabilities has also a potential in providing a better vertical aerosol typing. The Melpitz Column Experiment was organized by TROPOS in the period May-July 2014 with an intensive operational phase from 13-30 June. In the framework of this campaign, we evaluated CALIPSO's aerosol-type classification scheme (Level 2, Version 3.01 product), during a satellite overpass in close distance from the Melpitz station, using high quality airborne aerosol in-situ observations. The data used for this work were acquired with the ACTOS platform, carried by a helicopter, employing a large number of in-	ECA-IN aimed in a validation exercise of CALIPSO aerosol classification product during a satellite overpass close to the TROPOS Research Station in Melpitz, via direct comparison with corresponding retrievals from airborne in-situ measurements acquired during the Melpitz Column Experiment. More specifically, the ACTOS platform (carried by a helicopter) provided measurements of the absorption and scattering coefficients, BC concentration, particle size, chemical composition and refractive index with multi-wavelength aethalometers, nephelometers, particle sizers and particle collecting filters. The helicopter flied to 1-1.5 km above ground level (a.g.l.), high enough to cover part of the lidar height ranges. Using the synergy of the acquired measurements we effectively characterize the aerosol particles at different heights and evaluate the CALIPSO classification product.

					situ instrumentation, providing optical and microphysical characteristics of the particles at different heights. Using this unique dataset, the evaluation of the CALIPSO product is feasible.	
MSY1	UFO-AHI	Understanding the formation of secondary organic compounds under high insolation conditions	RP1	36	Source contributions of OA are still not fully understood due to the mixed source origins (anthropogenic or biogenic) and atmospheric processes that cause the formation of secondary OA; formation enhanced by anthropogenic pollutants (e.g. NOx, SO2 and O3). The combination of high insolation and high temperatures favor the oxidation of gaseous precursors and also enhance emissions of biogenic compounds and the formation of semi volatile compounds. The effect of insolation is also reflected in the number concentration of ultrafine particle that dramatically increases in summer with a marked diurnal maximum at midday pointing to the new particle formation processes. A number of studies identified the important role of organic compounds in atmospheric aerosol formation and subsequent aerosol growth. The objectives are: • to characterize secondary organic aerosols (SOA) at regional and urban environments in the western Mediterranean basin in summer • to study the new particle formation of SOA from gaseous precursors • to evaluate the role of anthropogenic emissions in the formation of new secondary particles from biogenic emissions.	Within the framework of this project we deployed a PTR-ToF-MS 8000 (Ionicon) and a prototype of TAG-AMS (Aerodyne Research). The PTR-ToF-MS worked perfectly during the whole campaign (06/30-07/15). Only 12h of data have been lost due to a power failure which occurred during night (07/08/2015). From the total PTR-ToF-MS signal, 159 ionic fragments have been extracted and quantified with a time resolution of 1 min. Roughly these 159 ions corresponds to about 100 distinct VOCs Numerous issues were encountered with the TAG-AMS system during the campaign (power box, filaments, and chromatographic column), and only few days of measurements are available.

MSY2	AUFP-UHIC	Ambient Ultra Fine Particles under high insolation conditions: characterization of nucleation episodes using PSM	RP1	4	A Particle Size Magnifier was setup in Barcelona by the PI at the start of the measurement and operated by IDAEA throughout the campaign alongside a suite of other instruments, most importantly being: a Long DMA TSI-3080 SMPS; a short DMA TSI-3082; a water CPC (>5nm). For the first two weeks the PSM was located at the Palau Reial before being moved for the third week to Monseny to observe the nucleated air mass arriving at a background site. From this data collected during nucleation events, number concentrations were derived and particle size spectra spanning size bins 1.25 - 478.3 nm.	Nucleation events were observed using the PSM at Palau Reial site but not at Montseny, probably because of the high loading of particulate matter observed during these days. Hence, we have captured a nucleation event and estimated number concentration of a single nucleation event for Palau Reial. The nucleation event was observed on the 4 th of July 2015 at the Palau Reial site in Barcelona starting at 10:00 and ending at 15:00 UTC. This one nucleation event, measured using the PSM and short-DMA SMPS (1.25-94.7nm), led to a concentration of 15,493 1/cm 3 for the mode with the smallest modal diameter observe. This implied that a particle number concentration measurement (for Da < 13 nm) which omits the 1 - 3 nm size range may underestimate the concentration of a nucleation event of this type by 44 %.
MAID O1	MORGANE-MAIDO	Water vapour and aerosol vertical profiles at Maido Observatory	RP1	14	The Upper Troposphere Lower Stratosphere (UTLS) plays an important role in Earth's climate system and overall stratospheric composition (e.g. Flueglistaler et al., 2009; Randel et al., 2014). Perturbations to the distributions of trace gases such as ozone, water vapor, and aerosols in this region can lead to direct forcing of climate. Indirect effects through, for example, changing cirrus following new particle production can also impact the radiative balance in this region. In recent years UTLS physical processes have been the focus of field campaigns over	The observations of this project will take place during a campaign of ~4 weeks duration during May 2015. This timing will allow this project to exploit synergies afforded by coordinating balloon sonde launches with LIDAR measurements in the Maïdo ObservatoRy Gas and Aerosols NDACC Experiment (MORGANE). Approximately 20 balloon sondes will be launched at the Maïdo Observatory. The launches will be timed to coincide with the LIDAR measurements. The

					the Pacific (CONTRAST, CAST, ATTREX), and South America (TRO-pico) regions, but less attention has been given to the tropical Indian Ocean. Thus the goal of this project is to provide high-resolution balloon measurements of temperature, aerosols, water vapor and ozone in Reunion (21S, 55E) to complement existing instruments at the Maïdo observatory in the framework of the MORGANE (Maïdo ObservatoRy Gas and Aerosols NDACC Experiment) campaign. These measurements will not only enable characterization of the vertical structure of the UTLS in the Indian Ocean, but will also provide accurate measurements for LIDAR calibration and satellite retrievals in a region of the world with scarce measurements. This suite of measurements have not been performed in the tropical Indian Ocean, and this observational strategy, leveraging on existing resources at Maïdo Observatory, will help to assess the factors controlling UTLS chemistry and dynamics over the Indian Ocean. This project is also envisioned as international collaborative effort between DWD (Germany), OSU-Reunion (France) and NASA (USA). By bringing in expertise from DWD, it will help to train local staff at Maïdo Observatory on innovative measurement techniques (COBALD/CFH) for the long-term monitoring of UTLS composition.	NDACC data validation protocol requires that each NDACC instrument undergoes periodic validation campaigns that ensure the quality of the measurements. To this aim, NASA has developed a mobile lidar instrument capable of measuring high quality vertical distributions of aerosols, water vapour, ozone and temperature. NASA has installed its mobile validation instrumentation at the Maïdo facility to participate to the MORGANE campaign. Together these efforts will enable a more complete characterization of UTLS composition than possible with LIDAR measurements alone and will also enable cross-validation of balloon-borne, lidar and satellite-based tracer, dynamical and particle measurements. To achieve the science goals of the project, the balloon sonde payloads will consist of a Cryogenic Frostpoint Hygrometer in tandem with an electrochemical concentration cell (ECC) ozonesonde. The third component of the balloon sonde payloads will be the COBALD lightweight aerosol backscatter sonde, permitting the detection and profiling of ice/aerosol particles. In addition, the use of operational meteorological radiosondes (Modem M10, France ; Vaisala RS92 and RS41, Finland) will reveal the dynamics of the UTLS region. These radiosondes are

						recognized as world leaders among operational radiosondes, and by mounting them with the CFH instrument package, the ascent will provide not only 4 streams of relative humidity data but also a well-characterized temperature measurement. These are crucial parameters to understand aerosol processes revealed by the COBALD/LIDAR aerosol measurements. In the framework of GRUAN, DWD will be in charge of preparing the CFH, COBALD and Vaisala radiosondes and of the training of the Maïdo Observatory staff (launch procedure, data acquisition and data analysis) to the new aersol/water vapor measurement techniques (COBALD/CFH). We also anticipate collaboration with ETH in Switzerland as well for the COBALD data processing.
CMN1	NICE	Nucleators of Ice at monte CimonE	RP1	8	Ice nucleating particles (INPs) are crucial in determining the properties of clouds, both in terms of their radiative budget and of rain and snow formation. The lack of quantitative data on the temporal and spatial variations of INPs hinders a thorough assessment of their role on regional and global precipitation patterns. INPs of biological origin are particularly intriguing since they can promote the freezing of water at moderate supercooling (-2/-15 °C) and can shed new light on the relationships between land use and climate. At the University of Basel we	NICE project took place between the 5th and the 12th October 2015, for a total of 7 full days of field activity at Monte Cimone. Our portable PM10 sampler was brought and installed on site (05/10/15), air samples collected on quartz fibre filters (05-12/10/15) and the whole instrumentation was finally uninstalled at the end of the field work period (12/10/15). The filters were successively brought back to Basel and the content in unit air volume of INPs active at -15 °C or

					have been studying the variations over time in the abundance of INPs active at moderate supercooling at the High Altitude Research Station Jungfraujoch (3580 m a.s.l., Switzerland). Our results indicate that INPs active at moderate supercooling are efficiently removed from precipitating clouds at early stages of precipitation. The further step in this research is to extend the study on the variability of INPs of biological origin on a broader spatial scale. The project NICE constitutes a first structure of connection of observatories and its main scientific objectives are: - to study the presence of INPs of biological origin at Monte Cimone; - to test the general validity of previous results we obtained at Jungfraujoch on the temporal variations of INPs; - to collect information on airborne INPs released from the Mediterranean basin; - to compare the data on the INPs measured at Monte Cimone with those measured at Jungfraujoch and Puy de Dome for the same period of sampling.	warmer temperatures determined by immersion freezing. These data are currently being compared with the meteorological conditions registered at Cimone during the week of observations and with the INPs deposited on PM10 filters collected for the same days at the observatories Jungfraujoch and Puy de Dome. In parallel to the collection of the filters for the assessment of INPs of biological origin, we collected: - Particles on acetonitrile filters, for the determination of INPs active per contact freezing, three times per day (h 03.00, 11.00, 17.00 local time), 30' sampling collection, PM1 and PM10 fractions; - Aerosols on quartz filters to determine their chemical composition, twice a day (from h 20.00 to h 08.00 and from h 08.00 to h 20.00), 12 hours sampling collection, PM1 and PM1-10 fractions. Analyses on these samples will be carried out at CNR Bologna by Franco Belosi and Stefano Decesari, respectively, and are aimed at providing further information on the characteristics of the sampled aerosols.
CIAO1	MICROLIRA	Microphysical characterization of cirrus clouds by LIdar and Radar instruments	RP1	11	The sensitivity analysis of the FLG RT model was carried out on both synthetic and real lidar data. The latter were taken with MUSA (Multi-wavelength System for Aerosols) Lidar, deployed at CNR-IMAA Atmospheric Observatory (CIAO) in Potenza, Italy. This multi-wavelength Raman lidar instrument is a mobile reference	The one-dimensional Fu-Liou-Gu radiative transfer model, developed in the early 90's, recently has been adapted to retrieve the cloud and aerosol radiative forcing using as input the aerosol and cloud lidar extinction coefficient atmospheric profile measurements (Lolli et al., 2015, Tosca

					EARLIENT system (Pappalardo et al., 2014) with a multi-year database of available measurements. The FLG model has been tested in two stages: 1) On a synthetic aerosol lidar data, simulated at 355 nm and 532 nm respectively, which take into account real meteorological conditions, for four different vertical resolutions. This synthetic lidar database is used to intercompare the different retrieval algorithms for the stations candidate to enter in EARLINET (Pappalardo et al., 2004) 2) For real lidar measurements of cirrus cloud. The FLG model sensitivity is tested for different lidar vertical resolutions. Limited to the cirrus cloud forcing, an intercomparison is also carried out versus the V3 MPLNET cloud algorithm (Lewis et al., 2015, submitted) developed to retrieve cirrus cloud extinction from single-wavelength lidars. This method needs the assumption of the value of the Lidar Ratio. In this intercomparison the uncertainty in cloud forcing retrieval by MPLNET lidar network is quantified. The thermodynamic profile of the atmosphere, needed to calculate the net radiative forcing, is calculated with the standard thermodynamics profile (USS976) model for the synthetic lidar data, while for the real lidar measurements an ad-hoc co-located radiosonde was launched. Emissivity and albedo values are taken from MODIS BRDF/Albedo algorithm product, with a spatial resolution of 0.1 degrees averaged over 16 days temporal window. The	et al., 2015, in progress). The FLG RT model calculates the direct effect of the aerosol forcing at each altitude level inputting the aerosol optical depth of the layer and for the column the partial contribution to the total AOD for each aerosol species. The FLG parameterization contemplates eighteen different types of aerosols, with single scattering aerosol properties parameterized through the OPAC (Optical Properties of Aerosol and Clouds) catalog. Differently, for cloud forcing, the FLG RT model needs as input, at each altitude level of the cloud, the Ice Water Content (IWC) and the effective drop/crystal diameter De. These parameters cannot be retrieved directly by lidar measurements, for this reason we use the parameterization (for cirrus clouds especially) proposed by Heymsfield et al., 2014 where De and IWC are retrieved through the atmospheric temperature and lidar extinction profiles (Lolli et al., 2015, Tosca et al., 2015, in progress). The efficacy of Heymsfield et al., 2014 is evaluated through robust radar-based retrieval of the IWC. Cloudnet processing, based on ceilometer, microwave radiometer and radar data provides a categorization of liquid droplets, ice particles, aerosols based on different sensitivity of lidar and radar to different particle size ranges. For layers

					sensitivity of the FLG RT model to the input parameters is evaluated applying the Montecarlo technique. Each extinction profile is replicated 30 times running the Montecarlo code on the original profile uncertainty. Likewise for each replicated extinction profile, the Montecarlo technique gives a value of surface albedo and profile temperature, based on their uncertainties. The radiative forcing of each profile is then represented with a histogram.	identified as ice clouds, the ice water content (with the related uncertainty) is derived from radar reflectivity factor and temperature using an empirical formula derived using aircraft data. Lidar instruments are high-resolution optical devices capable to retrieve optical and microphysical characteristics of aerosols, clouds and precipitations (Lolli et al., 2013). Depending on the adopted lidar technique, i.e. elastic, Raman etc., the data-handling requires a number of assumptions that may influence the determination of the net forcing. Since the lidar equation has two unknowns (Lolli et al., 2013), elastic single-wavelength lidars need a strong assumption to retrieve the extinction coefficient, input of the FLG model: the values of the Lidar Ratio. For aerosols, S shows a large variability in the range typically within 20-120 sr (Ackermann, 1998) influencing then drastically the consequent retrieved extinction profile. On the contrary, Raman technique has been successfully used for measurement of aerosol and cloud extinction, being the retrieval independent of any assumption Raman signals, however, is characterized by a much lower signal-to-noise ratio respect to the elastic signal (Ansmann et al., 1992): therefore large integration time are required along with the application of smoothing filters that

						reduce the effective vertical resolution of the retrieved profiles but also the relative error. In this work, a limit has been fixed on the maximum relative error of both the synthetic and real lidar profiles to values within 30-40%. The sensitivity analysis of the FLG model was carried out on both synthetic and real lidar data. The latter were taken with MUSA (Multi-wavelength System for Aerosols) Lidar, deployed at CNR-IMAA Atmospheric Observatory (CIAO) in Potenza, Italy. This multi-wavelength Raman lidar instrument is a mobile reference EARLIENT system (Pappalardo et al., 2014, AMT) with a multi-year database of available measurements.
PAL1	ACITIC	Aerosol-Cloud Interactions and Their Impact on Arctic Climate	RP1	13,5	Aerosols affect Earth climate in many ways. Besides direct effect (reflection and absorption of sunlight), the aerosol impact the climate also indirectly via their potential to activate into cloud droplets i.e. act as cloud condensation nuclei (CCN). Clouds are a significant player in the global climate system and the currently poorly understood aerosol effect via clouds forms the largest source of uncertainty in predictions of climate change. This is, mainly, because the properties of clouds and their formation processes are poorly understood, particularly in case of the mixed phase and ice clouds, which are widely observed in the Arctic regions. In this project, a part of extensive Pallas cloud Experiment (PaCE 2015), we	The project was executed at Sammaltunturi station (67°58′N, 24°07′E), the part of Pallas-Sodankylä GAW station during October and November 2015. ICPF CAS CZ contributed to PaCE 2015 campaign with instruments for measuring elemental and organic carbon (EC,OC) in aerosol. The optical properties of aerosol particles and EC were measured with following unique set of instruments: two instruments for continuous measurements of elemental and organic carbon (Field EC/OC Analyzer Sunset, USA in PM10 sampling enabled version) - provided by ICPF CAS CZ, two SP2s which can

					will focus on refinement of measurements of Equivalent Black Carbon (EBC) and Brown Carbon (BrC) and their contribution to CCN activation. According to latest study (Raatikainen et al. 2015) conducted in at the same place as suggested project, an unexpected discrepancy of factor of five was found between equivalent BC measured by optical methods multi-angle absorption photometer (MAAP) and Aethalometer and refractive BC measured by Single Particle Soot Photometer (SP2). There are several potential reasons for the observed difference, like limited sizing of SP2 (75–655 nm), MAAP lensing effect, use of composition dependent parameters (e.g. mass absorption coefficient), and finally the involvement of non-refractory light absorbing organics such as BrC, which cannot be detected by the SP2. To study this discrepancy, organic and elemental carbon will be also measured in parallel using both total and interstitial inlets.	directly measure also mixing state of aerosol together ith two instruments for aerosol absorption, the Aethalometer and the MAAP. Those two triplets of instruments were divided between two inlets, the total inlet with no nominal cut-off (lets in all particles including cloud droplets) and interstitial inlet with cut-off of 10 um (only non-activated particles). With such experimental setup the contribution of BC, EC and BrC to activated fraction can be determined. Aerosol size distributions and total number concentrations were measured with two Differential Mobility Particle Sizers (DMPS) and Condensation Particle Counters (CPC) divided between two inlets as described above. Aerosol particle hygroscopicity and CCN activation ability were measured with: a Hygroscopicity Tandem Differential Mobilitity Analyzer (HTDMA) and The Cloud Condensation Nuclei Counter (CCNC, DMT model CCN-100).Further this campaign focused on cloud activation of Black (BC) and Brown (BrC) carbon.
FKL1	BL-smog	Boundary Layer profiling using NARLa with NOA-PollyXT lidar – test measurements for smog layers.	RP1	11	The objective of the BL-smog ACTRIS-2 TNA was focused on boundary layer aerosol profiling starting as close to near-surface as possible, using the near-range lidar receiver NARLa of the University of Warsaw with PollyXT lidar of the National Observatory of Athens, which is one of the core remote instruments of the Finokalia Station on	NARLa is capable of performing elastic and Raman measurements at UV and VIS from below 100m, depending on setup configuration and thus can complement the PollyXT signals in lower detection range. Both lidars took observations as a part of the ACTRIS-2 JRA1 field campaign

					Crete. Colocated measurements were performed during two winter months at Thiseio in Athens with an aim to characterise smog layers occurring frequently in lowermost boundary layer. Obtained data sets were also used for facilitating the synergy of lidar and sunphotometer data using the GARRLiC inversion algorithm in order to study the degree of improvement on the inversion results for increased range of the lidar signals due to employing NARLa.	designated to joint remote and in-situ sensing of absorbing aerosols in Athens. NARLa was installed onto the PollyXT, as close to the laser beam as possible. An exact position was optimized to achieve the lowermost overlap possible. Signals were evaluated together to obtain the optical properties of the atmospheric particles throughout the entire troposphere for three cases: marine aerosol mixed with smog particles, aloft smog and local urban pollution. For the latter two cases preliminary inversion of the microphysical parameters was performed. As expected, the final lidar retrievals from the combination of PollyXT with NARLa improve the synergy with the sunphotometers (GARRLiC microphysical retrievals).
CAO3	INUIT-Cyprus	Ice Nucleation Research Unit â€“ Cyprus INP Closure Study	RP1	70	Ice formation in the atmosphere plays a central role in the formation of precipitation at mid-latitudes. The DFG-funded INUIT project investigates ice formation processes in the atmosphere, including laboratory and field studies and model calculations. The specific field mission on Cyprus in April 2016 was dedicated two main objectives: 1) a physico-chemical characterization of atmospheric ice nucleating particles (INP) in an environment where mineral dust and marine aerosol is present; and 2) a closure between INP concentrations determined experimentally and predicted by models. The measured aerosol composition and size distribution at the site and the	The physico-chemical characterization of ice nucleating particles (INP) was realized by a combination of the Fast Ice Nucleation Chamber (FINCH) and a pumped counterflow virtual impactor (PCVI). The PCVI samples only the activated, grown ice crystals from the FINCH, rejecting all other (smaller) particles by means of a counterflow. The ice is evaporated by the dry sample flow inside the PCVI, such that only the original INP remains. Thus the system is termed IN-PCVI. After the IN-PCVI, the INP can be transferred to the various analysis instruments: A condensation particle counter for

					parameterizations inferred from laboratory studies conducted during the INUIT project will serve as input data for the model.	number concentration; aerodynamic and optical particle sizers for size distribution; the laser ablation aerosol mass spectrometer ALABAMA for single particle composition analysis; an impactor for off-line analysis by environmental scanning electron microscopy (ESEM). Additionally, INP concentration were measured by the horizontal ice nucleation chamber HINC of ETH Zurich and the Frankfurt immersion/deposition freezing experiment FRIDGE. Furthermore, samples were collected with a bio-aerosol collector (SKC collector) into liquid solution followed by drop freezing experiments conducted in the Cyprus Institute laboratory using these samples. Cloud activation properties of the ambient aerosol were measured by a CCN counter. Aerosol parameters (non-refractory composition, size distribution, number concentration, PM10, PM2.5, PM1) and gas-phase tracers (CO, SO2, O3, NOx, SO2) were provided by the Agia Marina Xyliatou station where the INUIT field measurements took place. Unmanned aerial vehicle (UAV) were operated taking samples from higher altitudes for the INP analysis in FRIDGE.
SIR1	TREBOL	Training on Doppler and planetary Boundary Layer detection	RP1	10	The aim of this project is by high frequency acquisition (1 Hz) of data from Doppler and/or Elastic lidar to apply the methodology described below and study the mixing layer and following the temporal	The analyses are applied over the particle backscatter coefficients, Î²(r), obtained from lidar data. The 1-s values of Î²(r) are derived from the attenuated backscatter profiles

					evolution of the MLD and of the turbulence inside this region. The main reason for choosing SIRTA station (Haeffelin et al., 2005) is its long experience on mixing layer detection by lidar. This is evidenced by the development of STRAT algorithm (Morille et al., 2007), by the improvements on the PBL attribution based on surface meteorological data (Pal et al., 2013), and by its studies based on other instruments (e.g., Cimini et al., 2013). Additionally, the availability of suitable instrumentation (for example, the power of the IPRALâ€™s laser) makes SIRTA station as the optimal one to carry on this project.	applying an atmospheric transmittance, T(r), averaged over one hour. The 1-s profiles of fluctuations of the particle backscatter coefficients, Î²â€™(r), are derived from these 1-s values of Î²(r) and the hourly averaged value of Î²(r). These values of Î²â€™(r), are used to estimate the high order statistics moments: Variance, Skewness and Kurtosis. The integral time scale, a measure for the correlation length of a process, is evaluated at different heights checking its value with the temporal resolution of the lidar data. This allows confirming the feasibility of the detection of the inertial subrange and the possibility of solving the turbulent fluctuations. The variance spectra are studied at different altitudes in order to verify its agreement with Kolmogorovâ€™s Law inside the PBL.
MAIDO2	FTIR-Cal-LaReunion	Calibration of FTIR instruments at MAIDO-OPAR laboratories using portable EM27/SUN spectrometer	RP1	17	The MAIDOâ€□OPAR laboratory is equipped with two ground based highâ€□resolution Fourier Transform Infrared (FTIR) spectrometers of the type Bruker IFS 125HR. The spectrometers are operated remotely by BIRAâ€□IASB. These spectrometers perform quasiâ€□continuous measurements, under clear sky conditions, in the midâ€□infrared (MIR) and nearâ€□infrared (NIR) spectral range covering several gaseous compounds in the atmosphere. For the MIR data the special focus is on retrieving volatile organic compounds (VOC's) and biomass burning gases whereas for the NIR data the focus is	1) IFS 125HR calibration with respect to a reference, a well calibrated portable EM27/SUN spectrometer: Atmospheric measurements in the NIR spectral range will be performed with both spectrometers placed sideâ€□byâ€□side at La Reunion. The data analysis of the high resolution IFS 125HR, which is part of the TCCON network, is done with a standard retrieval software GGG2014 used by the TCCON community. A scaling retrieval is performed to the measured data with respect to a modeled a priori for each day. The column averaged dry

					set on greenhouse gases (GHG's). The NIR measurements are part of the TCCON network measurements, where a scaling retrieval is performed to get the total column concentration of the target gases. The measurement station is a provisional TCCON station due to the fact that a calibration of the instrument could not yet be done as the remote location is difficult to be accessed with inâ€situ instruments onâ€board research aircrafts. This project aims at calibrating the IFS 125HR spectrometers with the help of a wellâ€calibrated lightweight, portable, lowâ€resolution spectrometer â€ EM27/SUN. This spectrometer has been proven to measure GHG's in the NIR spectral range with very high accuracy and precision meeting the TCCON requirements. One such EM27/SUN spectrometer, which is calibrated with respect to the Karlsruhe TCCON spectrometer, will be borrowed from the Karlsruhe Institute of Technology (KIT) and transported to La Reunion for the duration of the project. This project aims at two particular objectives: 1) Calibration of the IFS 125HR spectrometer in the NIR spectral window using a well calibrated portable EM27/SUN spectrometer, 2) Testing of the spectrometer performance under tropical conditions at La Reunion.	air mole fraction Xgas for the target gas is calculated and it is scaled by a standard calibration factor corresponding to the target gas such as to make the results comparable to the WMO standards. This calibration factor is derived from dedicated campaigns performed at several easy to access TCCON sites. This factor is found to be very close to each other for all sites included in the calibration campaign; however none of these sites were in the tropics. Performing sideâ€byâ€side measurements with the EM27/SUN will help to find the calibration factors for the IFS 125HR spectrometers at La Reunion, which will improve the data quality profoundly. 2) Spectrometer performance under tropical conditions: The TCCON scaling retrieval results are prone to errors if the modeled a priori values are unable to capture some of the special events of sharp changes in the atmospheric state, as well as, due the interference of the increased water vapor in the tropics. The EM27/SUN data analysis is done with a standard retrieval software PROFFIT widely used by the NDACC community. A scaling retrieval is performed to the measured data for each day with respect to a WACCAM a priori profile for that site. Total column measurements of the same atmospheric state in the tropics by two

						independent remote sensing instruments and two retrieval ideologies will help in testing the instrument performance, quantifying the deficits and improving the retrieval schemes.
GRA2	TRAMP	TRaining on Aerosol Microphysical Profiling (transfer of knowledge from ACTRIS2 to LALINET	RP1	34	The Laser Environmental Application Laboratory at SÃ£o Paulo-Ââ€Brazil has been developing a long term working on lidar measurements. In 2015 they started to setting up a new lidar system at Natal, Northeastern Brazil, to study aerosol optical and microphysical properties and their vertical distribution, mainly focused on long-Ââ€range transportation across the Atlantic ocean, i.e., dust aerosols from Sahara desert and biomass burning coming from African continent. However,they are facing a new challenge to improve the synergy between instruments such as lidar and sun photometer to retrieve vertical profiles of aerosol microphysical properties. The objective of TRAMP was to perform an intense learning process to apply sun/sky photometer and lidar data to LIRIC algorithm. Nevertheless due to the advances in retrieval algorithms by one hand and to the other hand to the special features of the Brazilian and LALINET (Latin American Lidar Network), lidars the training has been focus on GRASP algorithm. This included different tasks: (i) how to prepare the input data with information measurements of the sun/sky photometer, lidar system, and surface reflectance based on satellite measurements; (ii) how to work with the	Lidar measurements have been performed using Mulhacen, Granada lidar, to learn all the steps to setup the lidar system and the tests based on the EARLINET measurement protocol. From the data base possible cases of Saharan dust transport to Granada has been identified, analyzing the altitude of layers detected by the Mulhacen lidar system and the optical properties such as AOD and Angstrom Exponent (AE) retrieved by the sun/sky photometer. After applying Klett retrieval analyses additional processing of lidar and sunphotometer data has been done. The input data for GRASP was prepared using measurements of seven distinct wavelengths, 355, 532 and 1064 nm from the lidar system and 440, 675, 870 and 1020 nm from the AERONET sun-photometer. The Rayleigh backscatter profile of atmosphere has been derived from a synthetic profile obtained by scaling the standard atmospheric profile with surface meteorological data measured at a co-located meteorological station. Finally surface radiance data was retrieved based on the monthly statistical analysis of MODIS/AQUA

					settings data in order to select the most suitable initial guess, constrains, configurations of radiative transference, etc.; (iii) how to extract and interpret the output data information based on fine and coarse mode of aerosol, and (iv) the final goal is to compare with measurements of sun/sky sunphotometer and lidar profiles.	sensor data for the chosen period. After adjusting the GRASP setting data and finally run GRASP, it was necessary to learn how to retrieve the aerosol optical and microphysical properties on a vertical distribution for the fine and coarse mode. As output of microphysical properties, it was retrieved aerosol fine and coarse mode concentration and single scattering albedo, both on vertical distribution. The real and imaginary part of refractive index and size distribution, for both, fine and coarse aerosol mode were also retrieved.
MAID O3	AEROMARI NE	Measurements of Marine Aerosols at Maïdo Observatory using Drones and Balloons, AEROMARINE	RP1	28	The goal of the AEROMARINE project was to:1) Test the Printed Optical Particle Spectrometer (POPS) instrument with a drone, a light plane and a balloon launch.2) Acquire datasets on marine aerosol distribution and atmospheric thermodynamic state to further our understanding on marine aerosols and marine boundary layer.3) Estimate the exchange of aerosols between the Marine Boundary Layer (MBL) and free troposphere.The POPS instrument was designed to be used on board UAVs and balloons. Its capability was tested for both platforms within this project to measure aerosols in the MBL and the TTL.	The POPS instrument was developed at CSD by NOAA and CIRES (Cooperative Institute for Research in Environmental Sciences at the University of Colorado Boulder) researchers. POPS counts the number of aerosols and can resolve an aerosol size as low as 140 nm [Gao et al., 2016]. The POPS instrument was deployed at Reunion Island during a two-week field campaign in March 2016. Two balloon sondes were launched at Maïdo Observatory at nighttime on March 23 and 31. The first payload consisted of a POPS, a COBALD lightweight aerosol backscatter sonde and a CFH water vapor sonde (see Figure 1). Unfortunately communication between the POPS/COBALD sondes and the ground receiver was interrupted above

						10km. The second radiosounding with a payload of POPS was successfully performed on March 31 and the aerosol concentration profile was completed up to 30km. On a technical side, the two radiosoundings were used to train S. Evan and J. Brioude to the new POPS aerosol instrument (sonde preparation, launch and data acquisition).In addition to balloon launches at the observatory, it was planned to integrate the POPS instrument on board an Unmanned Aerial Vehicle (UAV) that can carry a payload of 2kg. The UAV was supposed to take-off from the Cambaie air base at sea level on the west coast of the Island. The goal was to sample aerosol in the MBL, downstream of the observatory. The first day of test flights was dedicated to test the UAV flight skills. Unfortunately, difficulties were encountered during the takeoff stage and prevented us from doing POPS measurements on board the UAV. The alternative plan was to use a light plane. Two profiles were performed over the Saint-Paul Bay area at 2km offshore with POPS installed on an ultra light aircraft (see Figure 2).
FKL2	LAMP	Planetary boundary layer measurements by means of multiwavelength Raman and Doppler wind lidar	RP2	4	Urban boundary layer heights can be highly complex due to the heterogeneous roughness and heating of the surface. The scientific objective of this TNA is to estimate the ABL depth, to provide near-real time information on the distribution of aerosol particles and wind profiles. The ABL will be compared	A HALO Photonics Stream Line scanning micro-pulsed Doppler lidar provided by Finnish Meterological Institute (FMI) will be located next to the PollyXT-NOA. The two instruments will be used to characterize the Atmospheric Boundary Layer

					with the corresponding retrievals of the multiwavelength aerosol Raman lidar PollyXT-NOA. Primary goal of the study is to demonstrate if a reliable monitoring of the boundary layer top, under different aerosol and meteorological conditions is possible. Doppler lidars offer a direct approach to investigate the atmospheric boundary layer. Instead of measuring a proxy of the vertical mixing, Doppler lidars can measure directly the vertical air velocity. The HALO wind lidar will be also used to estimate the turbulence within the planetary boundary layer in order to identify strong convection cases, capable of dispersing smog aerosol particles at high altitudes.	turbulent motions in terms of updraft and downdraft properties. The operation of a fully automated BL lidar includes an automated data analysis. The Wavelet Covariance Transform method has been already developed for the identification of automated planetary boundary layer using the PollyXT measurements. The same technique will be developed in Doppler wind lidar to identify the boundary layer. The top height of the boundary layer will then be compared with the results of PollyXT.
GRA3	HYGROLIRA	Study of aerosol hygroscopicity by combination of lidar and microwave radiometer,	RP1	25	Aerosol particles size may increase due to water uptake (hygroscopic growth) altering their size distribution and their associated optical and microphysical properties under high relative humidity conditions. In this sense, relative humidity is an essential variable in the description of aerosol-cloud interaction and hygroscopic growth studies. Global radiosonde observations provide most of the relative humidity information required as input in weather-forecast models. However, the temporal resolution of routine observations performed by weather services is rather low, typically with one or two radiosondes launches per day. One of the objective of HYGROLIRA was to assess a multi-instrumental approach to obtain relative humidity profiles	In order to carry out this project an intensive campaign was performed at the Granada Atmospheric observatory. Radiosondes were launched two or three times per day always that weather conditions allowed it. In addition, the lidar measurements were intensified in order to be able to monitor any change in the aerosol properties along the day- and night-time and also to retrieve water vapour profiles during night measurements. In parallel continuous temperature and humidity profiles were taken from HATPRO microwave radiometer. Night-time radiosonde measurements were used in order to calibrate the water vapour lidar channel. For that

					with a reasonable time and spatial resolution in a continuous way. For that, the combination of water vapour profiles from a Raman lidar and temperature profiles from microwave radiometer to retrieve relative humidity profiles has been evaluated. The projectintends to assess the capability of this approach to fill the lack of information on relative humidity profiles due to the limited radiosonde measurements. The project also evaluates the suitability of these profiles in terms of temporal and spatial resolution for hygroscopicity studies. On other hand the project also aims to evaluate the capability of this multi-instrumental approach to address aerosol hygroscopic studies, by combining aerosol and relative humidity profiles.	two different calibration approaches were implemented: i) obtain the calibration constant from the mean value of calibration profile (ratio of water vapour mixing ration from RS and the uncalibrated one from lidar) and ii) iterative linear regression procedure between the uncalibrated water vapourprofile from lidar and the one from radiosondes. Aerosol profiles were obtained from the lidar measurements using the Klett algorithm. In particular, the aerosol backscatter coefficient was calculated for the lidar wavelengths (355, 532 and 1064 nm). The Angström exponent derived from these profiles, along with information from models (NAAPS, HYSPLIT), and sun-photometers and radiosondes measurements allowed to identify the type of aerosol and if there were conditions of good mixing over the region. Aerosol hygroscopic growth was studied by using relative humidity, derived from lidar derived water vapour profiles and microwave derived temperature profiles, and backscatter profiles to calculate the enhancement factor.
SMR2	HCCNP	Investigations of hygroscopicity (K) and chemical composition of newly formed particles	RP1	25	New particle formation (NPF) and subsequent growth have been intensively studied owning to their important roles in air pollution and climate. Knowledge on the chemical composition of the newly formed	ln this campaign, we would like to perform our newly developed nano-CCNC to measure the size-resolved hygroscopicity (K) and retrieve chemical composition of sub-5 nm

					particles is essential for understanding their formation and evolution in the atmosphere. Due to analytical limitations, however, relatively little information is available for sub-5 nm particles. We have developed a nano-cloud condensation nuclei counter (nano-CCNC) for measuring size-resolved hygroscopicity and inferring chemical composition of nanoparticles. This is the first time application of nano-ccnc system in the boreal fores! (Hyytiala), where NPF happens frequently, with at least 24% of days containing an event. We are aiming to measure the hygroscopicity of newly formed particles (e.g. 3 nm), and then determine the contribution of organics along with the chamber experiments. The retrieved data may provide further insight into the chemical composition of newly formed particles and the role of organic and inorganic compounds in the initial steps of atmospheric new particle formation and growth.	aerosol particles. The basic concept is to operate a water-based CPC in a scanning supersaturation mode as a CCNC, as well as extend the use of ils counting efficiency spectra and link it to the analysis of CCN activation spectra. The measurement procedures and data analysis methods have been demonstrated through laboratory experiments with various aerosol particles of diameter down to 2.5 nm. Meanwhile, to minimize the particle loss by diffusion, especially for the newly formed particles, we may consider setup. the whole system outside to reduce the length of sampling inlet.
ISAF1	ISAF012016-AR	Training on AERONET m aster photometer calibratio n	RP1	8	The main objective is to know the procedure for calibration of AERONET master sun/sk y radiometers that is performed at Izaña. Thi s includes the solar calibration, as well as th e calibration of the Moon direct irradiance c hannels.	As responsible technical person for 6 A ERONET Cimel photometers in Argent ina, which also make part together with Lidar instruments, of the Special Prog ram for Volcanic Ash Monitoring, the candidate is currently on a scientific vis it to the AERONET calibration facility at the University of Valladolid, Spain. In order to improve this training, we pr opose a visit to the master calibration si te at Izaña Observatory. At Izaña it wi ll be possible to know first-hand the procedure of master photomet

						er calibration, including all the quality checks that are performed to these inst ruments in order to assess the maximu m quality. Moreover the Moon observa tions currently being implemented wit hin AERONET- Europe protocol will also be shown.
JFJ1	NUCLACE-2016	Investigation of free tropospheric nucleation	RP1	3	The main objective of the work is to characterize new particle formation in the free troposphere above the Alps. After having done several intensive campaigns and have published/submitted several papers (Bianchi et al., Science, 2016, Troestl et al., submitted, Frege et al., submitted), we decided that the best way to get more insight into new particle formation is to conduct long term measurements. Therefore, the idea is to measure the particle and the ion size distribution for a time of at least 2 years. In order to do that we will use the neutral and air ion spectrometer (NAIS).	The work consisted in the installation of an instrument that will stay there at the Jungfraujoch East ridge for at least two years. As already mention the instrument is the neutral and air ion spectrometer (NAIS). The installation took three days and it went very well. At the moment the instrument is running properly and providing reliable data. Few nucleation events have been already detected.
FKL5	BIOMEDS (Bioaerosols Mediterranean Sampling)	Understanding the Link Between Meteorology and Speciated Abundance of Bioaerosols in a Costal Mediterranean Environment	RP1	12	During a previous study by Negron et al., 2016 state-of-the-art sampling techniques and protocols were developed and combined with the speciation of PBAPs by flow cytometry (FCM). An effective FCM protocol was developed to identify and quantify speciated bioaerosols populations. These state-of-the-art techniques were used to sample and study PBAPs at the Finokalia ACTRIS site. The main goals of this study are: (1) to quantify the total PBAPs in Finokalia and understand the variability of them under different meteorological scenarios, (2) to identify the different groups of Eukaryotic and Prokaryotic	The experimental procedures applied during BIOMEDS are those developed by Negron et al., 2016. The experimental procedures consisted in the collection and analysis of the liquid biological samples collected at Finokalia, Crete. Sampling was performed using the SpinCon II (InnovaPrep LLC, Inc.), a wet walled cyclone portable air sampler, which concentrates atmospheric aerosol in a liquid suspension. The SpinCon II was placed inside an air conditioned facility in the Finokalia station and a straight 1¼ in. OD tube was connected to its

					microorganisms in the samples; and (3) to determine the relative abundance of them and how it varies with meteorological conditions and air mass origin.	inlet to sample from outside. The sampling line was located approximately 5 ft. above the ground. Previous to sampling, SpinCon II volumetric flow rate measurements showed the instruments flow rate was around 280 L/min, which is within the range measured by Negron et al., 2016 during the sampling in the Atlanta metropolitan area. The sampling procedure and analysis consisted of four main steps: SpinCon II cleaning protocol (CP), SpinCon II sampling, sample post-processing, flow cytometry (FCM) and epifluorescence microscopy (EPM) analysis.
SMR1	BVOC oxidation and NPF	Emission of BVOC and their oxidation products contributing to New Particle Formation	RP1	46	The scientific objective was to bring the recently developed PTR-3-TOF instrument to Hyytiälä and measure concentrations and fluxes of precursor gases (BVOC) their oxidation products: semi and low volatile organic compounds and even ELVOCs. The combination of the Innsbruck PTR-3-TOF data with ELVOC data from Helsinki's CI-API-TOF is capable to bridge the gap in understanding from atmospherically relevant BVOC to ELVOC.	We set up the Innsbruck PTR-3-TOF in the container on top of the 35 m Hyytiälä tower of SMEAR II during Spring 2016. The PTR-3-TOF sampled air through a especially designed 5 m long tube with a high flow rate. Close to the intake point a sonic anemometer for 3 D wind velocities was mounted allowing for eddy covariant flux measurements.
SMR3	BORCOS	Boreal forest contribution to the terrestrial carbonyl sulfide sink	RP1	18	Carbonyl sulfide (COS) is the most abundant sulfur-containing trace gas in the troposphere and is an important precursor for aerosol formation in the stratospheric sulfate layer. COS has oceanic and anthropogenic sources and a strong terrestrial sink, with about 10% of tropospheric COS production reaching the stratosphere. The terrestrial sink is	Leaf-level COS fluxes were measured using branch chambers developed at the SMEAR site. Three chambers were used: two on Scots pine trees (the dominant species present) and one on an aspen tree. Soil COS fluxes were measured using three different automatic chambers. Two of the chambers were Licor LI-8100

					dominated by vegetation uptake, with a smaller component of uptake by soils, but COS emissions have also been observed under some conditions. Strong links with photosynthesis during plant uptake have led to recent efforts to develop COS as a tracer for photosynthetic CO2 fluxes and biogenic VOC production. Despite the importance of the terrestrial sink in the global COS budget, ecosystem COS flux studies are rare and we lack key information such as the drivers and magnitude of COS flux seasonality in different ecosystems, and the relative contribution of plant and soil components to ecosystem fluxes. The objective of this study was to develop an integrated understanding of component and ecosystem–level COS exchange in a boreal conifer forest. Specifically, our objectives were to: 1) determine the magnitude and variation of canopy COS fluxes and their relationship with environmental drivers and CO2 fluxes; 2) determine the magnitude and variation of soil COS fluxes and test and develop the COSSM soil COS flux model with the measured data; 3) combine component and ecosystem flux measurements to quantify the contribution of canopy and soil fluxes to total ecosystem COS fluxes.	chambers modified for COS measurements, one with a dark chamber and one with a transparent chamber. The third chamber was a larger clear top surface chamber regularly used at the site. The Licor chambers contained only moss coverage on the surface, while the large chamber contained moss and understory vegetation (Vaccinium vitis-idaea). Measurements of ecosystem COS fluxes were made using the eddy covariance technique. Canopy profile concentrations were also measured at four heights (125m, 18m, 4m, 0.5m) to provide vertical gradients of COS and calculate ecosystem fluxes using the flux-gradient approach, which is complimentary to the eddy covariance measurements, especially under low-turbulent conditions. COS concentrations were measured by tunable infrared laser differential absorption spectroscopy using an Aerodyne continuous-wave quantum cascade laser (QCL) system capable of high resolution (10 Hz) simultaneous measurements of COS, CO2, CO and H2O concentrations. Each chamber and profile height, as well as three calibration tanks, were measured once each in a 90-minute cycle. The profile and chamber measurements were made on the instrument that was brought to the site for the campaign, and this

						operated in parallel to another QCL that is used for the ongoing ecosystem flux measurements at the site.
FKL4	FAME-16	Finokalia Aerosol Measurement Experiment-16	RP1	24	FAME-16 will address the following research questions: (1) What happens to already aged OA as it is exposed to additional OH? Does it get more oxidized? Does it start fragmenting with mass decreases? (2) Can we constrain better the volatility distribution of aged OA? (3) Why is nucleation so infrequent in Finokalia? Is the system missing ammonia, monoterpenes, sesquiterpenes, amines, sulfur dioxide? (4) What is the water solubility distribution of aged OA? (5) Can we show that the biomass burning OA (bbOA) is converted to bb-OOA and then to OOA using biomass burning plumes arriving at the site? (6) What is the BC absorption enhancement for highly aged aerosol? Is there still brown carbon remaining after considerable aging? (7) What fraction of the aged particles has non-volatile cores? (8) What is the chemical composition of the very aged OA? Are there tracers of sources still remaining? Other compounds remaining? (9) Comparison of the ACSM that is operating in the site for two years with a HR-AMS. Do we get similar OA factors? (10) There has been a significant reduction of sulfate since FAME-08. Has there been a change of the OA chemical or physical properties as a result?	The following measurements will take place during the month-long campaign: Aerosol Volatility-Hygroscopicity - CMU thermodenuder (coupled with HR-AMS and SMPS) - Dilution chamber (for isothermal dilution and evaporation of the OA) - HTDMA Particle chemical composition - HR-AMS - ACSM - Hi-Vol PM2.5 sampler - PM1, PM10 filters - Samples for C14 analysis - Samples for tracer analysis Particle size distribution - Two regular SMPS units - One UF-SMPS - OPS - MOUDI-Impactor Chemical aging experiments - Mobile dual chamber system - PAM-like reactor Gas-phase concentrations -PTR-MS -SO2 -CO -NOx -O3 -NH3 Black Carbon MAAP SP2 Two PAX units

FKL3	DAVP-RS	Determination of Aerosol Vertical Profile with Remote Sensing	RP1	21	Main objective of this TNA project is gaining in-situ experience on different types of measurement tools such as Lidar, multi-wavelenght aethalometers, and particle sizers, and combining this experience with retrieved satellite observations and algorithm applications. It has known that it is a quite difficult way to use passive remote sensing data alone for determining aerosol properties. Unfortunately, there isn't any ground based Lidar in Turkey operating for scientific purposes currently. This project is a good starting point to develop methods for implementing passive remote sensing data to pollution studies in Turkey.	Within the context of this TNA study, MetOp-A GOME-2 Level-2 collection offline products obtained from EUMETSAT via Turkish State Meteorological Organization's membership. These offline products for a particular location are accessible one or two days after the satellite overpass and they include trace gas observations such as BrO, H2O, HCHO, NO2, O3, and SO2 and secondary data sets such as Atmospheric Aerosol Index (AAI), Cloud Fraction, Surface Albedo, etc. Since MetOp-A has a sun-synchronous near polar orbit, it overpasses each observation location approximately at 10:15 am in local time. Satellite provides data in msec temporal resolution and 40*80km spatial resolution. Its global coverage is completed in about one and half days. One-day data of GOME-2 has more than 200 thousand rows. For this reason, AAI has retrieved from this data collecting with using MATLAB HDF library codes. Statistical filters have implemented to AAI Athens data set according to Solar Zenith Angle, Cloud Fraction, and Quality Flags given in the same data collection. Then, a GIS software MapInfo has used for interpreting the data. IDW interpolation has chosen as GIS method since it is geo-statistically best way to visualize 2D data. EMEP 50*50 km country specific grids have used as

						interpolation boundary and raster layer. Over 300 thousand data points, 54 thousand of them are located at city region of Athens, are evaluated statistically. This map, actually this data set shows UV absorbing/scattering aerosol values over Athens.
CESA R2	CEILMAX	Development of aerosol retrieval techniques from MAX-DOAS and lidar/ceilometer measurements	RP2	28	Multi-axis differential optical absorption spectroscopy (MAX-DOAS) is a passive remote sensing technique to obtain tropospheric aerosol and trace gas profiles. The retrieval of these profiles is based on scattered sun light measurements with different viewing directions. In recent years, there are considerable developments and applications of MAX-DOAS, as the experiment setup of MAX-DOAS is straightforward and inexpensive. Numerous different retrieval techniques have been developed to retrieve the column and profile information of aerosols and trace gases. The retrieval of aerosol profiles assumes certain aerosol optical properties, for example, the single scatter albedo and the asymmetry parameter. These assumptions may often contribute to large uncertainties of the results. On the other hand, lidar is an active remote sensing technique providing an accurate estimate of the aerosol vertical profiles (depending on the complexity of the system). Therefore, it is useful to combine both MAX-DOAS and lidar datasets for the retrieval of aerosol optical properties. The objective of this project is to develop a new technique for the retrieval of aerosol optical properties by integrating MAX-DOAS and	MAX-DOAS infers profile information of atmospheric absorbers from the spectral absorption along several light paths through the atmosphere. The conversion of the absorption signal to aerosol and trace gas profiles requires the inversion of the corresponding radiative transfer equation. As this process cannot be linearized, it is usually achieved by fitting the absorption measurements to the forward model results. For the aerosol profile retrieval, it is commonly suggested to use the absorption signal of an atmospheric absorber with a known vertical concentration profile, the oxygen dimer complex O4, as a tracer of the optical paths in the atmosphere. However, recent studies show that O4 absorption cross section is a significant source of uncertainty in the profile retrieval. Different retrieval methods mainly differ in the parameterization of the aerosol extinction and other aerosol parameters. Moreover, almost all retrievals assume some constant aerosol optical properties for the profile inversion which adds further

					lidar/ceilometer observations. As there are only few advanced lidar systems available, we will also focus on combinations of MAX-DOAS and ceilometer - this approach is expected to increase the range of applications considerably. The observational site in Cabauw is a perfect location for this purpose, as it provides an extensive meteorological and remote sensing data base, especially in the framework of CINDI-2.	uncertainty to the results. In this project, we are aiming for the development and testing of a new technique which is based on regularizing the aerosols profiles by using lidar/ceilometer observations to retrieve aerosol optical properties. In order to avoid the unknown uncertainty of the O4 absorption cross section, the retrieval technique will mainly make use of the (relative) intensities as fit parameters. This approach also provides valuable information for understanding the variation of O4.
PUY5	InterFOG	Intercomparison of measurements systems for liquid water content (LWC) in clouds and fogs	RP2	5	The project is a contribution to the Oct. 2016 Intercomparison field campaign of cloud microphysical probes at the Puy-de-Dome station (France). Specifically, CNR-ISAC will provide a PVM system that is the fundamental measurement system for long-term liquid water content (LWC) observations in fogs in the Po Valley. Such measurements has been conducted at the Italian station of S. Pietro Capofiume in the Po Valley for almost three decades (Giulianelli et al., Atmos. Environ. 98, 394-401, 2014). An intercomparison with similar (or alternative) measurement systems for LWC is therefore a prerequisite to assure high-quality observations for such unique measurement record of fog frequency and intensity.	The instrument (a Gerber PVM-100) was transported and installed by CNR personnel at the Puy-de-Dôme observatory during the set-up phase of the experiment. This implied the evaluation of a proper positioning for the instrument out-door, which did not require an inlet but necessitated an undisturbed (passive) air flow across its optical path. Connection to the computer control system (indoor) was set up and monitored for stability. Data transfer to remote units (at CNR) were evaluated together with local technicians.

ISAF2	PSCIZO2016	PMOD/WRC spectrophotometer campaign at IZO, PSCIZO2016	RP2	57	Measurements of AOD in the ultraviolet to near infrared by PFR instruments Determination of the extra-terrestrial constants by using the Langley-plot technique Measurement of spectral aerosol optical depth with a double monochromator spectroradiometer and retrieval of extraterrestrial solar spectrum as reference for calculation of aod.	The campaign of PMOD/WRC at the Izaña Subtropical Access Facility was aimed at obtaining a calibration of aerosol optical depth for the standard, ultraviolet and lunar precision filter radiometers (PFR) operated within the GAW PFR global network. This calibration would also allow the traceability of aod measurements at the Izaña Subtropical Access Facility to become traceable to the world reference for AOD, represented by a Triad of PFR instruments stationed at the World Optical Depth Research and Calibration Center (WORCC). In addition, a spectroradiometer was operated for direct solar irradiance measurements in the range 300 to 500 nm to retrieve solar irradiance spectra and derive spectral aerosol optical depth over this wavelength range. The instruments were brought to the Izaña Subtropical Access Facility on 5 September and removed at the end of the campaign on 29 September 2016. The instruments were operated on solar trackers on the radiation platform of the Izaña Subtropical Access Facility. Measurements of solar irradiance were performed every minute for the PFR instruments, and every 20 minutes with the spectroradiometer. The measurement period covered the period 7 to 28 September 2016.

SIR2	RFOFC	Cloud radar measurements to study fog properties in France and Chile	RP2	21	The general objective of the visit is to improve my understanding of cloud radar calibrations and the study of its measurements. Fog occurs frequently in several locations in Chile, in particular near the coast in Northern Chile. A better understanding of the conditions leading to fog formation, development and dissipation is highly important because of high risk caused by fog to transportation (road and air). In addition, in desert areas of Northern Chile, fog is important because it nurtures important coastal native forests and because it is used as a source of water for populations located in remote areas. For this, the specific objectives are to receive training in radar measurement and calibration techniques, and to study fog parameters retrieval from the radar signal. If possible radar measurements along colocated measurements with an optical particle counter (OPC) must be conducted, to derive droplet size distribution with both instruments. OPC measurements can be made under a tethered balloon at SIRTA, which will allow direct comparisons between fog microphysical properties retrieved from Cloud Radar measurements and those retrieved from the OPC. Finally, receive training in the use of this data including an analysis on its uncertainties.	Analysis of a radar calibration experiment using a reflective target. - Take measurements of fog using the cloud radar and in-situ instruments (Optical particle counter on a tethered balloon) - Study the uncertainty of cloud radar reflectivity measurements. - Estimate cloud liquid water content profile and wind speed from radar measurements. - Comparation of cloud radar cloud properties retrieval with in-situ instruments for measurement uncertainty estimation.

PUY3	LWC-COMP	Liquid Water Comparison Campaign	RP2	17	In the summer of 2017 detailed investigations of stratocumulus clouds are planned at Graciosa, Azores. The slow-moving helicopter-borne payload “Airborne Cloud Turbulence Observation System” (ACTOS) will be used as a measurement platform with different Liquid Water (LWC)-probes, each using a different measurement technique. Deviations and uncertainties in the LWC measured by these probes are therefore expected and a detailed understanding of probe behavior and careful calibration under realistic conditions is essential for this project. As our laboratory setup is not capable for producing realistic clouds, it was therefore reasonable to join the “Intercomparison field campaign of cloud microphysical probes at the Puy-de-Dome station (France)” in October 2016. The site offers the measurement of natural clouds outside as well as in a wind tunnel with controllable wind speeds. Additionally our own probes could be compared to others during this campaign. The probes used by the Leibniz-Institute for Tropospheric Research (TROPOS) during the campaign were the following: Cloud Droplet Probe 2 with particle by particle feature (CDP-2), the Liquid Water Content Sensor 300 (LWC-300), two Particle Volume Monitors 100A (PVM-100A) and a ground-based Particle Volume Monitor 100 (PVM-100). The general objectives of the campaign therefore included: a) The Familiarization with two newly bought probes (CDP-2 and LWC-300), b) The evaluation of intervariability of	The work done includes data processing and analyzing of the two airborne PVM-100A, the CDP-2 PbP, LWC-300 (King probe) and the ground-based version of the PVM-100. The main focus at the moment is concentrated on the airborne probes. It has to be ensured that they will function properly by the start of the upcoming campaign on the Azores this summer. Comparison between the instruments has already started. The CDP-2 owned by TROPOS and the CDP-2 owned by OPGC LAMP show some differences. A more in depth look has to be done in order to find out whether the differences can be related to the experimental setup or if the problem can be related to the calibration. For the LWC-300 critical operating conditions were identified. Measured LWC are similar to the the ones measured by the PVM-100A, though at times some major discrepancies exist. The algorithm for the calibration has to be a little bit modified. Also the sensor's wire collision efficiency of drops has to be evaluated. Comparison of the PVM-100As to the CDP-2 resulted in a similar behavior of measured LWC though the PVM-100As usually measure less LWC. Reasons for this have to be more investigated in depth. The four airborne probes have to be calibrated against the most reliable one.

					the different LWC-probes, c) the qualification of critical operating conditions of these probes for data quality.	This reliable probe has to be determined.
CMN2	AFPO	AOD's with filter photometers observation at high mountain station	RP2	19	The main goal of the AFPO project is the synergistic use of PFR filter photometers and MICROTOPS II (MT2) ozone monitoring for the determination of Aerosol Optical Density. Usually the data obtained with the hand-held MT2 instrument do not allow for the computation of the AOD with sufficient precision to perform a direct comparison of the results of the two instruments. This limitation is mainly due to the difficulties in centering the sun in the display of the MT2 and in the no simultaneity of the measurements. To avoid these problems we plan: i) to install the MT2 on the same sun tracker where the PFR is located, ii) to automatize the measurements of the MT2 in order to synchronize the measurements of the 2 instruments.	Aiming to perform automatic measurements with the MICROTOPS installed and unmanned at the Mt. Cimone station, a software tool was developed for a full duplex communication between the instrument and a PC through serial port. The measured data are sent via serial cable to the PC and there are stored in an daily file for successive processing and analysis. The photometer is placed in an almost vacuum proof box to protect the instrument from the meteorological condition, with a clean PVC window allowing for the radiation measurements. Since the period of the campaign was relatively short, the PVC was used even if is well known that after about 3 month the PVC material suffers a decrease in its radiation transmission (particularly in the UV spectral range) due to direct solar radiation. In the future for long on field experiment the PVC will be replaced with a fused silica window. In order to account for this aspect and to correct the measured data the transmission of the window was assessed before and after the experiment with spectral

						measurements using a UV-Vis spectrometer.
CIAO2	INTERACT-II	NTERcomparison of Aerosol and Cloud Tracking	RP2	4	The scientific objectives of INTERACT-II are to evaluate the stability, sensitivity, and uncertainties of ceilometer aerosol backscatter profiles, to evaluate the sensitivity, uncertainties, and idiosyncrasies of ceilometer automated cloud base detection, and to put these into context by simultaneously evaluating the performance of a high specification research lidar. Here for the first time, three commercial ceilometers, two commercial lidars and two advanced systems form the EARLINET network (Pappalardo et al., 2013) have been intercompared.	The applicants wil take part to the INTERACT II (INTERcomparison of Aerosol and Cloud Tracking) campaign took place at Potenza EARLINET station from April 15th to December 31st, 2016. The applicants will take of care of miniMPL system and will ensure the proper functioning of the system to: - Study instrument performance for aerosol measurements - Study instrument performance for cloud measurements - Study of the instrument SNR and dynamic range (depending on the aerosol extiction coefficient, water vapour content, solar irradiance, ...) - Study of instrument stability (laser performances, thermal drifts, optical efficiency, detector stabillity) - Study of the instrument overlap (to this purpose we can fully exploit the capability of the Raymetrics scanning lidar; this will be also exploited to measure cirrus clouds at 3 degrees of Zenith to quantify specular reflection by ice crystals).
PUY4	InterHOLIMO	Intercomparison field campaign of HOLIMO at Puy-de-Dome	RP2	8	In the last years we developed a field instrument HOLIMO (Henneberger et al., 2013), which images in-situ single cloud particles using digital in-line holography. HOLIMO is a cloud particle spectrometer	For this inter-comparison campaign, we employed the holographic imager HOLIMO and a Fog Monitor (DMT) at the PUY station. In addition, a sonic anemometer measured the wind

					that can distinguish cloud particles according to their shape and thus can differentiate between ice crystals and cloud droplets down to an equivalent area diameter of about 20 µm. Since an absolute calibration of number concentration measurements is hard to achieve, inter-comparison campaigns are important for new probes to quantify their uncertainties in number concentration and cloud water content and to evaluate the inter-variability of cloud probes.	direction to turn the Fog Monitor into the ambient wind field. HOLIMO uses digital in-line holography to image cloud particles in a three-dimensional volume. A digital camera captures the interference patterns from all particles inside a well-defined sample volume. This HOLIMO image, called hologram, yields single particle information like size and shape for all particles within the detection volume. The data analysis is done by using the automated software HOLOSuite. HOLIMO detects cloud particles larger than 6 µm and can also measure large precipitation particles (mm-range). Particles larger than 25 µm are classified as liquid droplets or ice crystals based on their shape by supervised machine learning. The Fog Monitor is a single-particle scattering spectrometer for cloud particle between 2 µm and 50 µm.
JFJ2	CLACE-INUIT 2017	CLACE-INUIT experiment 2017 at Jungfraujoch field site	RP2	53,5	To improve understanding of cloud microphysical properties, interstitial and cloud particle residual aerosol properties, aerosol-cloud interactions and the effect of dynamics on these. This is part of the collaborative CLACE-INUT 2017 campaign at the Jungfraujoch (JFJ). The University of Manchester component objectives are to: 1. Provide a comprehensive data set cloud microphysics measurements. 2. Identify ice processes that impact cloud evolution significantly. 3. Determine whether observations in previous CLACE	The University of Manchester (UoM) made measurements of the Microphysical parameters of the Clouds enveloping the Sphinx laboratory on the Jungfraujoch (JFJ). A suite of state-of-the-art instruments (see instrument list below for description of instruments and acronyms) was deployed, mounted on a purpose built platform capable of automatically rotating and tilting the instruments directly into the ambient wind for un-perturbed cloud sampling.

					experiments e.g. the observed very sharp transitions between ice and liquid are due to changes in aerosol chemical composition, Cloud Condensation Nuclei (CCN) or Ice Nuclei (IN) properties. 4. To determine the surface based processes that may be responsible for very high concentrations of secondary ice in the cloud testing the hypothesis that surface frost is responsible. The motivation for the UoM deployment is to understand the development of the ice phase in clouds and to understand how aerosols are linked to this. The proposed instrument suite offers a unique opportunity to probe the science questions such as: why do mixed-phase clouds persist for much longer than expected? ; to what extent do cloud dynamics and/or the aerosols govern the phase of clouds over a range of spatial scales? It is clear from previous campaigns at JFJ and elsewhere) that rapid transitions occur between the liquid and ice phase and we wish to probe this and other features further, to better parameterise such behaviour, since this isn't as yet included in models. What is the source of the very high concentrations of ice particles observed in mountain clouds? Is it due to surface hoar frost fluxes as proposed by Lloyd et al. (2015)?	The following measurements of cloud microphysical properties were made throughout the period of the experiment using : - a 3V-CPI probe, to observe the cloud particle size distributions, particle habit (derived from particle images), and hence formation of ice particles in cloud and degree of cloud glaciation; - a CDP to observe the cloud droplet size distributions (within super-cooled and mixed phase clouds) (NB; the 3V-CPI and CDP both mounted on a tilting rotating wing to direct probes into wind) a fixed position heated ultrasonic anemometer - to measure the 3-D wind vector and automatically direct cloud probes into wind; a wing mounted heated ultrasonic anemometer - to attempt measurements of cloud particle (drop and ice crystal) fluxes; a fixed position PVM - to make bulk cloud water measurements (in super-cooled and mixed phase conditions); T and RH measurements - made in vicinity of cloud microphysics/dynamics measurements The measurements of the liquid and ice phase cloud particle size distributions are to be used to calculate the cloud liquid and ice phase water contents (the former was also be measured directly); Interpretation of the combined aerosol and cloud data set (available to all) will be undertaken to identify the important ice formation mechanisms acting within the clouds.

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

JFJ8	INUIT JFJ campaign 2017	INUIT campaign 2017 at the High Altitude Research Station Jungfraujoch	RP2	32	The overall objectives of the campaign at the high alpine station Jungfraujoch is to sample and investigate ice nucleating particles (INPs)/ ice residual particles (IPRs) in mixed phase clouds. The campaign is an extension of previous INUIT/CLACE-JFJ campaigns using the same instruments, but with an updated version hence an improvement of the setup.	Total aerosol particles and IPRs were sampled in parallel with the use of a MINI cascade impactor. The IPRs were collected behind the Ice-selective inlet (Ice-CVI). A dilution system was built to have the possibility to sample total particles for a longer time to match the duration of Ice-CVI sampling. Several different instruments for characterisation of the composition and physical properties of total aerosol, interstitial aerosol and IN. Single particles will be characterised by electron microscope (size, morphology, mixing state and chemical composition) at TU Darmstadt.
JFJ6	FRIDGE@CLACE2017	CLACE / INUIT 2017	RP2	36	Our project is part of the larger joint research efforts CLACE 2017 by PSI, ETH Zurich, the Ice Nuclei Research Unit INUIT and EU project BACCHUS, which study the cloud-aerosol interactions at the High Altitude Research Station Jungfraujoch. We measured the number concentration of immersion freezing and deposition / condensation freezing Ice Nucleating Particles (INP). Selected aerosol samples will be analyzed by electron microscopy for the composition and origin of individual INP .	The ice nucleus counter FRIDGE was set up in a laboratory of the Research Station. From January 25 to February 20, 2017 atmospheric aerosol samples were collected at in the Sphinx Laboratory. Samples were collected by two independent methods from a joint total aerosol inlet as well as downstream of a counterflow virtual impactor. For analysis of immersion freezing INP aerosol particles were collected by filtration, using membrane filters. For analysis of deposition/condensation INP particles were collected by electrostatic precipitation onto Si-wafers. At least one sample of each type was collected per day. Both types of samples were analyzed in FRIDGE. Immersion freezing INP were measured at 0°C - -

						30°C in aqueous extracts of the filters, using the drop freezing method of Vali (1971). Deposition freezing INP were analyzed between -20°C and -30°C by growing ice on the Si substrates, followed by photography and counting of the ice crystals. It is assumed that one ice crystal represents one ice nucleus.
JFJ5	INUIT-2017-MPIC	Ice residual composition measurements by single particle mass spectrometry	RP2	57	The objective of this project is to study the chemical and physical properties of ice particle residuals (IPR). IPRs are left after evaporating ice and water from ice particles. For the formation of ice particles above -38°C the presence of INP is necessary, because after ice activation under specific atmospheric conditions the INP grow up to ice particles. Therefore IPR provide a useful way to get information about the original INP. Because there are only few studies about INP analysis using single particle mass spectrometry, the main objective the Max Planck Institute for Chemistry (MPIC) group is to extend the knowledge about the chemical compounds of single IPR and to answer open questions, as the meaning of lead and black carbon with respect to the INP activation process and the relative abundance of biological INP in relation to the total number of INP. Moreover, using mass spectrometry allows time resolved analyses about the chemical compositions of particles, whereby it is possible to examine the transition from outside cloud aerosol particles to inside cloud particles (droplets, crystals and interstitial particles). During	Instruments provided by the MPIC group included: single particle mass spectrometer ALABAMA, the aerosol mass spectrometer C-TOF AMS and additional instrumentation as a particle counter (CPC), optical particle sizers (OPC), and a Multi Angle Absorption Photometer (MAAP). During the campaign five different inlet systems were operated. The ICE-CVI (TROPOS) and the ISI (PSI) inlet were installed to select freshly produced ice particles out of mixed-phase clouds. The ALABAMA was connected to the ICE-CVI or ISI every time clouds were present around the JFJ-station. The C-ToF-AMS was connected to the ICE-CVI during a few selected cloud events. Besides of the ice selective inlets a total inlet (provided by PSI) was used most of the time for measurements with ALABAMA and AMS when no clouds were present. Another total inlet (ETH) was used in combination with an aerosol concentrator (University of Toronto) to enrich the number of aerosol particles

					cloud-free periods aerosol particle analyses deliver additional information about the composition and variability of the background aerosol. Furthermore, the mixing state of aerosol particles and IPR will be investigated.	inside the system, which provides a higher particle concentration for the connected measurement devices. Also ALABAMA and AMS used this possibility for several hours. An OPC, a CPC and the MAAP were connected to an interstitial inlet during the whole campaign.
JFJ7	CLACE 2017	Clouds and Aerosol Characterization experiment 2017	RP2	30	In this project, our main scientific objective was to, for the first time, deploy the new portable particle concentrator (Sioutas et al. 1995) in the field for atmospheric ice nucleating particles (INP) measurements. By operating the concentrator upstream of INP instruments the capability of the concentrator for different particle sizes in the free-troposphere could be tested. In addition to the technical tests of the concentrator, we aim to contribute to the continuous INP measurements at Jungfraujoch.	INP abundance is measured using the Horizontal Ice Nucleation Chamber (HINC). The chamber was operated at 242K and relative humidity of 94% and 104% with respect to water, respectively. The generally low concentrations of INPs in the free-troposphere, were detected by applying the new portable particle concentrator upstream of HINC. A heated particle inlet was deployed from the rooftop of the station to the laboratory, where the concentrator and HINC was located. In addition to the measurements with HINC, several other INP and aerosol instruments, which were participating the in the field project, could be attached downstream of the particle concentrator. Measurements were taken with the laser ablation single particle aerosol mass spectrometer ALABAMA (Brands et al. 2011) , a second aerosol mass spectrometer (AMS, both from the Max Planck Institute for Chemistry in Mainz), the ice nucleation chamber FINCH (Bundke et al. 2008), the deposition freezing experiment FRIDGE (both

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

						University of Frankfurt), a wideband integrated bioaerosol sensor (WIBS) and the Laser Ablation of Aerosol Particles Time of Flight Mass Spectrometer (Laaptof from KIT). Our measurements of INP concentrations are complemented by several cloud measurements, conducted by our collaborators during this field project.
PUY7	UTIPEX	UCASS Testing and Intercomparison at Puy de dome EXperiment	RP2	10	This project aimed at testing the University of Hertfordshire Universal Cloud and Aerosol Sounding System (UCASS) - an open path optical particle counter designed for use as a balloon borne, or dropsonde sounding system. The UCASS has been deployed previously as a dropsonde system over germany, and as a balloon-borne sonde over Cape Verde. Comparative data for these experiments have been limited to aircraft based data with varied spatial and temporal coincidence, and/or remote sensing data. The purpose of UTIPEX is to to test the UCASS system in realistic environmental conditions, whilst retaining the control of a laboratory environment. This allows various instrumentation to be co-located with the UCASS in order to provide trustworthy comparative data. Furthermore, the performance of the UCASS can be monitored over long time periods, and various environmental conditions, thus allowing potential operational issues to be discovered. Of particular interest here was the effect of UCASS tilt (orientation with respect to wind direction), on counting efficiency.	This work comprised two main elements: wind tunnel based experiments, and platform based experiments. The wind tunnel saw two co-located UCASS instruments mounted alongside a CDP. To test the effects of tilt on counting efficiency, one UCASS was kept parallel to the air flow whilst the other UCASS was tilted in increments of 10 degrees from -30 to +30. This experiment was repeated for various wind speeds from 5 m/s (the reccomended operating speed) to 20 m/s. For the platform based experiments, a third UCASS unit was mounted to a weather vane and placed on the outdoor research platform. The UCASS is designed as a low cost, single use system for upsonde/dropsonde systems, and therefore the typical duration of use is ~1 hour. The platform mounted system allowed us to monitor the UCASS for longer durations and through relatively extreme conditions.

JFJ3	INUIT-CLACE-2017	Characterisation of ice nucleating aerosol particles by single particle mass spectroscopy and filter sampling	RP2	47	Only a minor fraction of atmospheric aerosol particles acts as a trigger for heterogeneous ice formation in clouds. Nevertheless, the activity of these ice nucleating particles (INPs) controls primary ice formation, followed sometimes by secondary ice multiplication processes, and thereby markedly influences the cloud radiative properties as well as the initiation of precipitation. The high variability of ice particle residuals chemical composition observed during previous campaigns also at the Jungfraujoch (Mertes et al., 2007, Cziczo et al., 2009, Ebert et al., 2011, Chou et al., 2011, Kupiszewski et al., 2016, Schmidt et al., 2016) asks for further in-cloud sampling to achieve the following objectives: • Comparison of the chemical nature of total aerosol particles with interstitial aerosol particles, or ice crystal or cloud droplet residual particles. • Validation of single particle chemical composition measurements by comparison with a second single particle aerosol mass spectrometer (ALABAMA, MPI Mainz). • Quantification of the ice nucleation behaviour of the total aerosol particles collected on the Jungfraujoch station. • Determination of the impact of single particle chemical composition on the ice nucleation behaviour of the aerosol particles collected in ice and mixed phase clouds at the Jungfraujoch. Further information on the background for this project can be found on the homepages of the INUIT project: http://www.ice-nuclei.de/the-inuit-project/ and the CLACE	To achieve the scientific objectives, a laser ablation single particle time of flight mass spectrometer (LAAPTOF, AeroMegt GmbH) was deployed on the Jungfraujoch station measuring single particle composition of aerosol particles or residual particles selected by the different aerosol inlets available: total (w/o particle concentrator), interstitial, Ice counter flow virtual impactor (ICE-CVI) or ice selective inlet (ISI). Furthermore, aerosol particles were collected by the KIT filter sampler setup connected to the total aerosol inlet via a vertical sampling line. With this setup, particles were collected on filters during day and night time with a frequency of two filters per day. In total 57 filters were collected covering the time period from January 24th to February 22th. After collection, the filters were stored at -20°C and at the end of the campaign they were transported back to KIT. There, the collected aerosol particles will be washed off and will be analysed for their ice nucleation behaviour with an immersion freezing method, which is similar to the Ice Spectrometer of the Colorado State University (Hiranuma et al., 2015). The aerosol mass spectrometer and the filter sampling system were installed, tested and calibrated at the Jungfraujoch in the week from January 16th to 20th, 2017 and were taken down on February

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

					project: https://www.psi.ch/lac/clace-gaw-plus.	23rd, 2017. Depending on the meteorological conditions, measurements were performed sampling continuously or intermittently at the different inlets.
JFJ9	FINCH_INUIT-JFJ 2017	Ice nucleating particles (INP) measured by FINCH during INUIT-JFJ 2017	RP2	60	Ice nucleating particles (INP) play an important role in the formation of ice and mixed-phase clouds and thus in the formation of precipitation in mid-latitudes. Their abundance and their pysico-chemical properties are, however, not well understood. With this project we wanted to improve the understanding of the cloud and precipitation formation process. In January and February 2017 a field campaign within the DFG-funded INUIT project (INUIT = Ice NUcleation research unIT) was conducted at the Jungfraujoch (INUIT-JFJ 2017) together with the CLACE (CLoud and Aerosol Characterization Experiment) campaign. The scientific objectives of the INUIT-JFJ 2017 field project of our group were the operation of the Fast Ice Nucleus CHamber, FINCH, at different temperature and humidity conditions of the chamber together with complementary instrumentation of our partner groups in order to - determine the number concentration of INP in ambient air - examine differences in INP number concentration under mixed-phase cloud and under no-cloud conditions - investigate whether there is any indication of biological material in the INP.	With the Fast ice nucleus chamber, FINCH, we determine on-line the number concentration of INP under different temperature and humidity conditions. Supersaturation in the chamber is reached by mixing the aerosol flow with another very cold flow (-50°C) and a moist flow. Particles enter the chamber and grow to crystals if they are ice-active. Below the chamber an optical particle counter (FINCH-OPC, self-built) detects the number and size of the grown particles (particle size is proportional to the intensity of the forward scattered light). Thus it can be derived how many of the available particles were ice active (so-called INP). Moreover the autofluorescence of the particles, which are excited with UV light, is detected - this gives information whether the INP contained biological material. During the INUIT-JFJ 2017 campaign we operated FINCH at three different inlets: - At a total inlet (operated by PSI) to sample interstitial and activated aerosol. This inlet was used for most time of the campaign. - At an Ice-CVI (counterflow virtual impactor, operated by TROPOS;

						Mertes et al., 2007) to sample ice particle residuals. This inlet was used only for a few hours because particle number concentrations were too low to allow reliable INP detection with FINCH. - At a total inlet with concentrator (operated by ETH Zürich) to sample a concentrated flow of interstitial and activated aerosol. This inlet was used during the last five days of the campaign. The chamber temperature in FINCH was kept to -25°C for most of the campaign whereas the saturation ratio with respect to ice (sice) was varied between 1.1 and 1.3 to cover the humidity range below and above water saturation. Approximately once per hour sampling was done through a zero-filter for ca. 10 min to obtain the level of background noise. FINCH was operated usually only during daytime since it is an instrument that needs intensive maintenance.
MSY3	SCOPE	Evaluation of Semi-Continuous OCEC analyzer Performance with the EUSAAR2 protocol	RP2	10	The European Committee of Standardization (CEN) has recently adopted EUSAAR2 as the reference temperature protocol to be used when performing the offline, thermal-optical/transmittance (TOT) Organic (OC) and Elemental Carbon (EC) analysis (EN16909:2017). The application of the reference protocol in the semi-continuous Sunset OCEC analyser and the comparison with other methods, eg. Black Carbon (BC) from absorption measurements can provide an insight on their comparability and evaluate the high-time resolution	The measurements took place in the regional background station Montseny, located in a valley in the Montseny range, 40 km to the NNE of the Barcelona urban area and 25 km from the Mediterranean coast n (41°46’45.63″N, 02°21’28.92″E, 720 m a.s.l), The Montseny (MSY) site is mostly dominated by biogenic emissions but is also affected by a large variety of emission sources: natural sources such as African dust, marine aerosols, biomass burning and

					concentrations of carbonaceous aerosol. Sunset Laboratory BV is interested in checking the performance of the Field OCEC analyzer using the EUSAAR2 protocol as following the requirement for the networks of all EU member states to measure EC and OC in particulate matter at background sites according to the Council Directive 2008/50/EC on ambient air quality and cleaner air for Europe. This exercise provides an insight on the comparison of the online OCEC analysis method with the offline, reference method at a challenging environment, a regional background site dominated by biogenic emissions.	urban emissions from densely populated areas along the coastline and transboundary sources from the European continent. The MSY monitoring site is equipped with: • Automatic analysers for NOx, O3, SO2 and CO • Optical particle counter for particle number and mass concentrations in different size ranges (0.4-30 µm) • Submicron particle number concentrations (>2.5nm) and size distributions (10-800 nm) • BC concentrations, absorption coefficients • Scattering and backscattering coefficients • Real-time chemical speciation of non-refractory submicron aerosol • PM10, PM2.5 and PM1 sampling, gravimetry and chemical speciation A Field OCEC analyzer (Sunset Laboratory Inc.) was installed at the MSY monitoring station from September 29, 2016 to March 1, 2017. Online analysis of TOT-OCEC in PM2.5 (4h time resolution), were compared with offline TOT-OCEC applying the EUSAAR2 temperature protocol to PM2.5 (24h) samples collected with both high volume and low volume samplers. EC measurements with the Field OCEC Analyzer were compared with BC from a MAAP 5012 (Thermo Scientific) and an aethalometer, model AE33 (Magee Scientific) (PM2.5). Further, offline chemical composition (PM1, PM2.5 and PM10) and Aerosol Chemical

						Speciation Monitor (ACSM) data (PM1) were available for comparison. The campaign also included a low volume sampler working in parallel. A denuder was used for a part of the campaign. OCEC analysis with the laboratory instrument will be performed in a selection of these filters.
PUY6	ACTRIS-2: Fidas® 200 S	Intercomparison field campaign of cloud microphysical probes 2016 - Fidas® 200 S	RP2	1	Goal of this campaign is to evaluate a new automatic instrumentation for cloud droplets real time analysis. This new instrument, called Fidas® 200, is based on TÜV certified analyzers used in long term air quality monitoring. This analyzer supplies a particle size distribution (mass and / or number) between 0.4 and 40 µm in 64 sizes channels, thanks to an optical principle.	To study interaction between droplets size and condensation nucleus, two analyzers will be installed side by side. One will be configured to measure droplets size, other to dry droplets and to evaluate condensation nucleus size. To take into account droplet composition, size distribution calibration can be corrected according to specific water refractive index. Instrument will be installed in a standalone IP housing and only requires an external 230 V ac power supply. Data acquisition is possible with integrated communication protocols (Modbus, Bayern Hessen, ASCII…) but will be online according to a 4G modem during all campaign duration. Instrument is a low cost of ownership and low maintenance solution that could answer long term measurement need for ACTRIS stations.

PUY2	INCePt	Intercomparison field campaign of cloud microphysical probes 2016	RP2	6,5	FMI was invited by Laboratoire de Météorologique Physique (LaMP) to join the effort on intercomparison and standardization of measured cloud micro-physical properties within the ACTRIS community. The Puy de Dôme station (45°46 ′N, 02°57 ′E, 1465m a.s.l.) is part of the Observatoire du Physique du Globe de Clermont Ferrand (OPGC) and run by the LaMP. The station has been developed and equipped in order to provide year-round monitoring of aerosols and gases, along with relevant atmospheric parameters, and to contribute to a better understanding of relationship between aerosols, cloud droplets and ice. The Puy de Dôme is characterized by frequent formation of clouds at the summit which makes the station an ideal place for cloud studies. Ground based studies of natural clouds are very rare and this is the main reason for which the station at the top of the Puy de Dôme is truly unique.	FMI contributed to Puy-de-Dome intercomparison campaign during 2016 with two cloud probes. We brought and installed our Forward Scattering Spectrometer Probe (FSSP-100) and the Cloud, Aerosol and Precipitation Spectrometer probe (DMT-CAPS) probe. They are both equipped with a tailored inhalation system for ground-based operation. The FSSP-100 orientation automatically adjusts against to the wind direction for optimal cloud particle sampling, while the DMT-CAPS had a fixed orientation against the main wind direction at the station. .This can possibly give additional insight in the artefacts caused by sampling losses if the alignment of the DMT-CAPS cloud probe is off the wind direction. In-situ cloud measurements were continuous and the cloud probes were daily checked to confirm their proper operation. FSSP-100 was operational from the first day until the last day of the campaign (28.09.2016 - 02.11.2016). DMT-CAPS probe was installed later on 18.10. (it was late due to maintenance at Droplet Measurement Technologies (DMT, Boulder, USA) and it was operational from 18.10 – till the last day of the campaign 02.11.2016. The DMT-CAPS probe includes two instruments for droplet size measurements: the Cloud and Aerosol Spectrometer

						(CAS) and the Cloud Imaging Probe (CIP). However, CIP probe was out of order due to technical problems after the DMT maintenance through the whole campaing. Therefore, any further analysis will be made only on CAS measurements. Calibration procedures were made at FMI twice for FSSP-100 in the beginning and in the end of the campaign. DMT-CAPS was calibrated at DMT before the campaign and at FMI after the campaign.
ISAF3	ISAF-04-2016-AL	Training on AERONET photometer operation for Tamanrasset/Assekrem technicians (2016)	RP2	4	Tamanrasset (1377 m a.s.l.) and Assekrem (2710 m a.s.l.) sites are World Meteorological Organization (WMO) Global Atmospheric Watch (GAW) stations located in a strategic site, in the core of the Sahara. Since 2006 a Cimel sunphotometer CE318 is located at Tamanrasset station performing a continuous monitoring of aerosol optical properties (http://aeronet.gsfc.nasa.gov/cgi-bin/type_one_station_aod_v3?site=Tamanrasset_INM&nachal=2&level=1&place_code=10). Continuous training of the staff in charge of the Cimel sunphotometer is essential to assess the quality assurance (QA) and quality control (QC) of the total column aerosol measurements. High quality aerosol optical properties at Tamanrasset are available for monitoring Saharan Air Layer, validating regional and global dust models as well as validating satellite-based dust measurements over high reflectivity ground conditions. The main objective of the project is to perform an intensively training of the Tamanrasset operators at Izaña station.	The main works to be performed during the training are: - Practice with sunphotometers: installation of Cimel sunphotometer, configuration of ASTPwin control software, performance of daily and weekly maintenance, troubleshooting and packing. - Introduction to calibration system in AERONET: calibration of direct sun measurements (Pre and Post-calibration) and calibration of radiance measurements in the optical calibration laboratory. - Access to measurements and derived products: AERONET products, alert system at AERONET and alert system at CAELIS.

JFJ4	INUIT2-RP2-TROPOS	Composition analysis of ice particle residuals combining aerosol mass spectrometry and counterflow virtual impactor technique	RP2	73	This activity is a subproject of the research unit INUIT (phase 2) of the German research foundation. It should contribute to a better understanding of the heterogeneous nucleation of ice particles in tropospheric super-cooled clouds. A question closely related to the different heterogeneous ice nucleation mechanisms is the nature of the ice nucleating particles (INP) with respect to their chemical composition and microphysical properties. Especially the anthropogenic influence on tropospheric ice formation and the atmospheric relevance of aerosol particles known as efficient INP from lab studies should be investigated.	The high alpine research station Jungfraujoch allows to sample ice particles in real atmospheric mixed-phased clouds and the aerosol characterization of their ice particle residuals (IPR), which are closely related to atmospheric relevant INP. Thus, the objectives are the physico-chemical characterization of IPR within natural mixed-phase clouds. The determination of the IPR properties requires the coupling of the unique Ice-CVI, developed by TROPOS, with several aerosol state of the art instruments. The IPR number concentration and size distribution are measured by CPC, OPS and UHSAS. The IPR chemical composition and mixing state is obtained by single particle mass spectrometry and electron spectroscopy applied by the cooperation partners MPI Mainz and TU Darmstadt.
ISAF5	PICASSO-VISION	Test of the VISION spectrometer	RP2	7	The VISION instrument is a miniature visible and near-infrared imaging spectrometer that will fly onboard PICASSO, a Cubesat spacecraft to be launched end of 2017. It will retrieve ozone and temperature profiles in the atmosphere by observation of occultations of the Sun through the Earth's atmosphere. The aim of the measurements at Izaña is to collect data for the spectrometer calibration, and to test the software that will be embarked onboard the satellite. The measurements consisted in	The measurements have been done with the Engineering Model of VISION. The solar images have been recorded at specific wavelengths in the visible and near-infrared spectral domain. For ozone retrieval, observations have been made at three different wavelengths, one at 601 nm, at the centre of the Chappuis O3 absorption band, and at two wavelengths located on each side of the Chappuis band, where O3 absorption is negligible and only Rayleigh and

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

					recording solar images during complete days, ideally from sunrise to sunset.	aerosols scatterings contribute: the ratio of these wavelengths will provide the quantity of O3 present in the path. The intensity of the signal versus solar elevation will provide information about extra-terrestrial solar flux (Langley plot), as well as the atmospheric aerosol and ozone content. Moreover, the shape of the solar image, particularly at low solar elevations where it is deformed by the refraction, will provide information about the temperature profile in the atmosphere (the refraction angle is depending on the air density, which in turn depends on the temperature).
ISAF7	ISAF-02-2017-TN	Training on AERONET photometer operation for Tunis_Carthage technicians (2017)	RP2	4	Since June 2013 a Cimel sunphotometer CE318 is located at Tunis_Carthage station performing a continuous monitoring of aerosol optical properties (http://aeronet.gsfc.nasa.gov/cgi-bin/type_one_station_aod_v3?site=Tunis_Carthage&nachal=2&level=1&place_code=10). Continuous training of the staff in charge of the Cimel sunphotometer is essential to assess the quality assurance (QA) and quality control (QC) of the total column aerosol measurements. High quality aerosol optical properties at Tunis_Carthage are available for monitoring dust storms travelling to the Mediterranean, for validating regional and global dust models as well as for validating satellite-based dust measurements. The main objective of the project is to perform an intensively training	The main works to be performed during the training are: - Practice with sunphotometers: installation of Cimel sunphotometer, configuration of ASTPwin control software, performance of daily and weekly maintenance, troubleshooting and packing. - Introduction to calibration system in AERONET: calibration of direct sun measurements (Pre and Post-calibration) and calibration of radiance measurements in the optical calibration laboratory. - Access to measurements and derived products: AERONET products, alert system at AERONET and alert system at CAELIS. - Data analysis, interpretation and limitation.

					of the Tunis_Carthage operators at Izaña station.	
MEL3	iMAC	Improving the accuracy of black carbon aerosol Mass Absorption Coefficient (MAC) measurements	RP2	30	Black Carbon (BC) aerosol particles are uniquely strong absorbers of visible and near-visible light in the Earth's atmosphere. BC light absorption is typically quantified by the Mass Absorption Cross-section (MAC). The primary objective of this project was to improve the accuracy of routine, atmospheric MAC measurements through the development of refractory BC (rBC) mass concentration measurements with the recently developed LII-300 (Artium Technologies Inc.) laser induced incandesence (LLI) instrument, and absorption coefficient measurements at wavelength 870 nm with a commercially available photoacoustic spectrometer (the Photoacoustic Extinctiometer PAX, Droplet Measurement Technologies DMT Inc.). The secondary objectives of this work were to characterize the wintertime absorbing aerosol in central Europe, and to explore the dependence of MAC values on BC mixing state.	The project objectives were achieved through comprehensive intercomparison experiments with existing, well-characterized techniques for measuring rBC mass concentrations and absorption coefficients. The following instruments were included in the experiments: a single particle soot photometer (SP2 DMT), a seven-wavelength aethalometer (AE33, Magee Scientific), a multi-angle absorption photometer (MAAP, ThermoFisher Scientific), an integrating nephelometer (Aurora 4000, Ecotech) and cavity attenuated phase shift monitors with and without integrating nephelometers operating at three different wavelengths (CAPS PMex and PMssa monitors, Aerodyne). The project was split into two components. The first component was a series of laboratory tests and calibrations conducted at the TROPOS institute in Leipzig from 23 - 29 January 2017. Following this, field measurements were conducted at the Melpitz research station from 1 February to 15 March 2017.

8 Overview of Transnational Access users to advanced ACTRIS stations supported

#	Project acronym	Project date	Researcher			Employing organisation / Home institution			Activity Domain[1] (Discipline)	Installations used by the researcher		
			Name	Gender	Nationality	Name	Legal status	Country		Infrastructure Short Name	Installation ID	Installation Short Name
CIAO1	NASA-JCET	22/09/15 - 02/10/15	S. Lolli	M	IT	NASA	RES	US	ENV	CIAO	1	-
CIAO2	INTERACT II	23/05/2016 - 28/05/2016	A. Damoiseau	M	BE	Envicontrol SA	SME	BE	ENV	CIAO	1	-
		23/05/2016 - 28/05/2017	S. Loyen	M	BE	Envicontrol SA	SME	BE				
CMN1	NICE	05/10/15 - 12/10/15	E. Stopelli	M	IT	University of Basel	UNI	CH	ENV	CMN	1	-
CMN2	AFPO	7/10/2016- 18/10/2016	D. Bortoli	M	IT	Univrsity of Evora	UNI	PT	ENV	CMN	1	-
SIR1	TREBOL	21/03/2016 - 01/04/2016	Gregori de Arruda Moreira	M	BR	University of Granada	UNI	ES	ENV	SIR	1	-

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

SIR2	RFOFC	03/01/2017 - 31/01/2017	Felipe Toledo	M	CL	Universidad de Chile	UNI	CL	ENV	SIR	1	-
PUY2	INCePT	27/09/2016 - 4/11/2016	David Brus	M	CZ	Finnish Meterological Institute	RES	FL	ENV	PUY	1	-
		27/09/2016 - 4/11/2017	Konstantinos Doulgeris	M	GR	Finnish Meterological Institute	RES	FL				
PUY3	LWC-Comp	8/10/2016-27/10/2016	Kai-Erik Szodry	M	DE	Institute for Tropospheric Research	RES	DE	ENV	PUY	1	-
PUY4	InterHOLIMO	3/10/2016-27/10/2016	Jan Henneberger	M	DE	ETH Zurich	UNI	CH	ENV	PUY	1	-
		3/10/2016-27/10/2017	Fabiola Ramelli	F	CH	ETH Zurich	UNI	CH				
PUY5	InterFOG	03/10/2016 - 29/10/2016	Leon Tarozzi	M	IT	ISAC-CNR	RES	IT	ENV	PUY	1	-
PUY6	ACTRIS-2: Fidas® 200 S	27/09/2016 - 27/10/2016	Maximilian Weiss	M	DE	Palas GmbH	SME	DE	ENV	PUY	1	-
		27/09/2016 - 27/10/2017	Boris Walter	M	DE	Palas GmbH	SME	DE				

PUY7	UTIPEX	02/10/2016 - 13/10/2016	Helen Smith	F	UK	Uiversity of Herfordshire	UNI	UK	ENV	PUY	1	-
MAIDO1	MORGANE-MAIDO	04/05/15 - 17/05/15	S. Meier	F	DE	DWD	RES	DE	ENV	MAIDO	1	-
MAIDO2	FTIR-Cal-LaReunion	21/10/15 - 05/11/2015	M. Sha	M	IN	BIRA	RES	BE	ENV	MAIDO	1	-
		25/10/2015 -30/11/15	C. Hermans	M	BE	BIRA	RES	BE				
MAIDO3	AEROMARINE	17/03/16 - 01/04/16	R.S. Gao	M	US	National Oceanic and Atmospheric Administration	RES	US	ENV	MAIDO	1	-
		17/03/16-01/04/16	K.Rosenlof	F	US	National Oceanic and Atmospheric Administration	RES	US				
SMR1	BVOC-NPF	10/04/16-20/05/16	A.Hansel	M	AU	University of Innsbruck	UNI	AU	ENV	SMR	1	-

SMR2	HCCNP	06/04/16-30/04/16	Z.Wang	M	CN	Max Planck Institute for Chemistry	UNI	DE	ENV	SMR	1	-
SMR3	BORCOS	04/04/16-07/04/16	K.Maseyk	M	IT	The Open University	UNI	UK	ENV	SMR	1	-
		04/04/16-07/04/16	H.Chen	M	CH	University of Groningen	UNI	NL				
		04/04/16-09/04/16	L.Koojimans	F	NL	The Open University	UNI	NL				
		04/04/16-07/04/16	U.Seibt	F	DE	University of California, Los Angeles	UNI	US				
PAL1	ACITIC	24/09/15 - 30/11/15	J. Schwarz	M	CZ	Institute of Chemical Process Fundamentals CAS	RES	CZ	ENV	PAL	1	-
		24/09/15 - 30/11/16	P. Vodicka	M	CZ	Institute of Chemical Process Fundamentals CAS	RES	CZ				

CESAR2	CEILMAX	27/08/2016 - 02/10/2016	K.Chan	M	UK	Ludwig Maxmilian S University	UNI	DE	ENV	KNMI	1	-
MEL2	ECA-IN	14/06/15 - 20/06/15	A. Tsekeri	F	GR	National Observatory of Athens	RES	GR	ENV	MEL	1	-
MEL3	iMAC	21/01/2017 - 16/03/2017	R.Modini	M	AU	Paul Scherrer Institute	RES	CH	ENV	MEL	1	-
		21/01/2017 - 16/03/2018	Jinfeng Yuan	F	CN	Paul Scherrer Institute	RES	CH				
FKL1	BL-Smog	09/01/16 - 25/03/16	I. Stachlewska	F	PL	University of Warsaw	UNI	PL	ENV	FKL	1	-
FKL2	LAMP	25/01/16 - 28/01/16	Mika Komppula	M	FI	Finnish Meterological Institute	UNI	FI	ENV	FKL	1	-
FKL3	DAVP-RS	09/02/16-29/02/16	Y. Aslanoglu	-	-	Hacettepe University	UNI	TR	ENV	FKL	1	-
FKL5	BIOMEDS	11/05/16-12/06/16	A.Negron	M	PR	Georgia Institute of Technology	UNI	US	ENV	FKL		
JFJ1	NUCLACE 2016	01/06/2016 - 30/08/2016	Federico Bianchi	M	IT	University of helsinki	UNI	FI	ENV	JFJ	1	-

JFJ2	CLACE-INUIT 2017	18/01/2017 -20/02/17	Thomas Choularton	M	UK	University of Manchester	UNI	UK	ENV	JFJ	1	-
		18/01/2017 -20/02/18	Keith Bower	M	UK	University of Manchester	UNI	UK				
		18/01/2017 -20/02/19	Michael Flynn	M	UK	University of Manchester	UNI	UK				
		18/01/2017 -20/02/20	Gary Lloyd	M	UK	University of Manchester	UNI	UK				
		18/01/2017 -20/02/21	Waldemar Schedewitz	M	UK	University of Manchester	UNI	UK				
		18/01/2017 -20/02/22	Michael Flynn	M	UK	University of Manchester	UNI	UK				
JFJ3	INUIT-CLACE -2017	10/01/2017 - 23/02/2017	Xiaoli Shen	F	CN	Karlsruhe Institute of Technology	RES	DE	ENV	JFJ	1	-

		10/01/2017 - 23/02/2018	Thea Schiebel	F	DE	Karlsruhe Institute of Technology	RES	DE				
		10/01/2017 - 23/02/2019	Ramakrishna Ramisetty	M	IN	Karlsruhe Institute of Technology	RES	DE				
JFJ4	INUIT2-RP2-TROPOS	17/01/2017 - 24/02/2017	Stephan Mertes	M	DE	TROPOS	RES	DE	ENV	JFJ	1	-
		17/01/2017 - 24/02/2018	Maik Merkel	M	DE	TROPOS	RES	DE				
		17/01/2017 - 24/02/2019	Stephan Günnel	M	DE	TROPOS	RES	DE				
		17/01/2017 - 24/02/2020	Udo Kästner	M	DE	TROPOS	RES	DE				
		17/01/2017 - 24/02/2017	Oliver Welz	M	DE	TROPOS	RES	DE				
JFJ5	INUIT-2017-MPIC	20/01/2017 _24/02/2017	Johannes Schnieder	M	DE	Max Planck Institute for Chemistry	RES	DE	ENV	JFJ	1	-

		20/01/2017 _24/02/2018	Hans-Christian Clemen	M	DE	Max Planck Institute for Chemistry	RES	DE				
		20/01/2017 _24/02/2019	Oliver Eppers	M	DE	Max Planck Institute for Chemistry	RES	DE				
JFJ6	FRIDGE@CLACE2017	23/01/2017 - 23/02/2017	Heinz Bingemer	M	DE	Goethe University Frankfurt	UNI	DE	ENV	JFJ	1	-
		23/01/2017 - 23/02/2018	Daniel Weber	M	DE	Goethe University Frankfurt	UNI	DE				
		23/01/2017 - 23/02/2019	Timo Keber	M	DE	Goethe University Frankfurt	UNI	DE				
JFJ7	CLACE 2017	20/01/2017 - 24/02/2017	Ellen Gute	F	DE	Univerity of Toronto	UNI	CA	ENV	JFJ	1	-
JFJ8	INUIT	22/01/2017 - 23/02/2017	Stine Eriksen Hammer	M	NO	TU Darmstadt	UNI	DE	ENV	JFJ	1	-
JFJ9	FINCH_INUIT-JFJ 2017	19/01/2017 - 22/02/2017	Diana Rose	F	DE	Goethe University Frankfurt	UNI	DE	ENV	JFJ	1	-

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

		19/01/2017 - 22/02/2018	Rebecca Kohl	F	DE	Goethe University Frankfurt	UNI	DE				
		19/01/2017 - 22/02/2019	Fabian Frank	F	DE	Goethe University Frankfurt	UNI	DE				
		19/01/2017 - 22/02/2020	Jennifer Wolf	F	DE	Goethe University Frankfurt	UNI	DE				
		19/01/2017 - 22/02/2021	Philipp Brauner	M	DE	Goethe University Frankfurt	UNI	DE				
ISAF1	ISAF-01-2016-AR	19/06/2016 - 27/06/2016	R.L.Delia	M	AR	CEILAP - UNIDEF CITEDEF - CONICET	RES	AR				
ISAF2	PSCIZO2016	11/09/2016 - 29/09/2016	Julain Grobner	M	AT	PMOD/WRC	RES	CH	ENV	ISAF	1	-
		11/09/2016 - 29/09/2017	Natalia Kouremeti	F	GR	PMOD/WRC	RES	CH				
		11/09/2016 - 29/09/2018	Luci Egli	M	CH	PMOD/WRC	RES	CH				

ISAF3	ISAF-04-2016-AL	07/11/16-11/11/16	Lahouari Zeudmi-Sahraoui	M	DZ	Office National de la Meteorologie	RES	DZ	ENV	ISAF	1	-
GRA2	TRAMP	26/03/2016 - 29/04/2016	Fabio Juliano da Silva Lopes	M	BR	Instituto de Pesquisas Energéticas e Nucleares - IPEN	RES	BR	ENV	GRA	1	-
GRA3	HYGROLIRA	01/05/2016 - 31/05/2016	Francisco Navas Guzman	M	CH	University of Bern	UNI	CH	ENV	GRA	1	-
MSY1	UFO-AHI	29/06/15 - 17/07/15	N. Marchand	M	FR	Aix Marseille University	UNI	FR	ENV	MSY	1	-
		29/06/15 - 17/07/16	B. Temime-Roussel	F	FR	Aix Marseille University	UNI	FR				
		29/06/15 - 17/07/17	A. Bertrand	F	FR	Aix Marseille University	UNI	FR				
MSY2	AUFP-UHIC	01/07/15 - 02/08/18	D. Beddows	M	UK	University of Birmingham	UNI	UK	ENV	MSY	1	-

MSY3	SCOPE	25/09/2016 - 05/03/2017	P.Panteliadis	M	GR	Sunset laboratory BV, Amsterdam	SME	NL	ENV	MSY	1	-
CAO3	INUIT-CYPRUS	29/03/16-17/04/16	J. Schneider	M	DE	Max Planck Institute for Chemistry	RES	DE	ENV	CAO	1	-
		29/03/16-27/04/16	K. Rebecca	F	DE	Goethe University Frankfurt	UNI	DE				
		01/04/16-21/04/16	D. Jaqueline	F	DE			DE				
		29/03/16-18/04/16	S.Mertes	M	DE	TROPOS	RES	DE				
		30/03/16-19/04/16	R.Fabiola	F	CH	ETH	UNI	DE				
		29/03/16-17/04/16	C Hans-Christian	M	DE	Max Planck Institute for Chemistry	RES	DE				
		29/03/16-15/04/16 and 23/04/16 to 01/05/16	S.Thea	F	DE	KIT	RES	DE				

		02/04/16-19/04/16 and 22/04/16 to 25/04/16	E.Hammer Stine	F	NO	Technical University Darmstadt	UNI	DE				

Appendix A: Documents used within the process of TNA to observation facilities – Application form

1

Proposal form for ACTRIS-2 Trans-National Access (TNA)

1. Principal Investigator				
First and LAST name:			**Gender:** ☐ Female	☐ Male
Affiliation:				
PI Research status:		**Country:**		
Postal address:				
E-mail:		**Phone number:**		
Recent references *(5 max; if no references, provide short CV)*				
2. Project Information				
Project title:				
Project acronym: *(20 characters max)*				
Integration in ACTRIS-2 activity:				
TNA type:	☐ **Training** *(e.g., UND, PGR)*	☐ **Mobility of expert** *(e.g., EXP)*	☐ **Combination of training / expert mobility** *(user group only)*	
Host infrastructure:	select...			
Access provider: *(responsible contact person in charge)*	**Name:**	**E-mail address:**		
3. Project dates				
Start date:		**End date:**		

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

4. Project description

- ***Scientific objectives*** *(max. 250 words)*

- ***Technical description of work to be performed*** *(max. 250 words)*

- ***Data management***

  Data from measurements at ACTRIS observational facilities are archived in the ACTRIS Data Centre for long-term storage and access. The ACTRIS Data Centre also offers to archive data resulting from TNA activities from additional instrument(s) at the site.

If additional instrument(s) are deployed during the project, please include a list of instruments you plan to bring to the site during the TNA: *(expand table if necessary)*

Additional instrument(s)	Resulting variable(s)	Principle investigator (Name, E-mail)

3

Do you plan to submit measurement data resulting from your TNA to the ACTRIS Data Centre? *(E.g., from other additional measurements at the site during the TNA, from additional instrument(s) deployed during the TNA, etc.)*	
Please describe the data resulting from the TNA in more details *(unless already included under scientific objectives above):*	

5. Participants Employing Organization / Home Institution

First and LAST name	Email	Institution name	Institution legal status	Institution country

6. Participants' information

First and LAST name	Gender	Activity domain	Position	Nationality	New user	Start of TNA dd/mm/yy	End of TNA dd/mm/yy	Duration of TNA
							Total number of user days:	0,0

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

7. Estimated project costs (in EUR, no decimals)		
Travel costs per person (A)	**Total number of participants (B)**	**Total travel costs (C= A x B)**
		0
Daily subsistence costs per person (D)	**Total number of user days** *(total from 6)* **(E)**	**Total subsistence costs (F= D x E)**
	0,0	0,0
	Total estimated project costs (G= C + F):	0,0
	Financial support requested to ACTRIS-2:	
8. Comments (optional)		

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

Application guidance notes

1. Principal Investigator
The Principal Investigator (PI) is the person responsible for the project who acts as contact of the proposal for the research team (user group). The Principal Investigator is expected to participate as a user.

PI Research status
Please select:

- UND = Undergraduate
- PGR = Post-graduate, student with 1st university degree
- PDOC = Post-Doctoral Researcher
- TEC = Technician
- EXP = Experienced, professional researcher

2. Project information

Integration in ACTRIS-2 activity
Please select:

- Profiling of aerosols (including combined Lidar and near-surface activities)
- Profiling of clouds and aerosol-cloud interactions
- Near-surface chemical, physical, optical aerosol properties and cloud droplets
- Near-surface trace gas concentrations

TNA type
Specify if the planned project aims at providing training to young researchers or at adding value to the infrastructure (mobility of experts). The review will take into consideration a potential training benefit to young researchers or the expertise of the user group. Both training and mobility must be sufficiently demonstrated in the section "Technical description".

Host infrastructure
Please select the host infrastructure from the following list of TNA providing observations facilities:

		Access provider	**Email**
1-CIAO	CNR IMAA Atmospheric Observatory, CNR, Italy	Lucia Mona	Lucia.mona@imaa.cnr.it
2-CMN	Monte Cimone taking advantage of Po Valley facility, CNR, Italy	A. Marioni	a.marinoni@isac.cnr.it
3-SIR	SIRTA Atmospheric Research Observatory, CNRS, France	Martial Haeffelin	Martial.Haeffelin@lmd.polytechnique.fr
4-PUY	Puy de Dôme, CNRS, France	Karine Sellegri	sellegri@opgc.univ-bpclermont.fr
5-MAIDO - OPAR	Maïdo Observatory – Observatoire de Physique de l'Atmosphère à La Réunion, France	Jean-Pierre Camas	jean-pierre.cammas@univ-reunion.fr
6-SMR	Station for Measuring Ecosystem – Atmosphere Relations II , UHEL, Finland	Tukka Petaja	tuukka.petaja@helsinki.fi
7-PAL	Pallas-Sodankylä Global Atmospheric Watch Station, FMI, Finland	Heikki Lihavainen	heikki.lihavainen@fmi.fi
8-JFJ	High Altitude Research Station Jungfraujoch, PSI, Switzerland	Urs Baltensperger	urs.baltensperger@psi.ch
9-KNMI	Cabauw Experimental Site for Atmospheric Research, KNMI, The Netherlands	Arnoud Apituley	apituley@knmi.nl
10-MEL	TROPOS Research Station Melpitz, TROPOS, Germany	Gerald Spindler	spindler@tropos.de
11-FKL	FINOKALIA Atmospheric Observatory, NOA, Greece	Nikolaos Mihalopoulos	nmihalo@noa.gr
12-KOS	Košetice-Křešín u Pacova, CHMI, Czech Republic	Vana Milan	vanam@chmi.cz
13-ISAF	Izana Subtropical Access Facility, UVA, Spain	Emilio Cuevas	cuevasa@aemet.es
14-GRA	GRANADA Atmospheric Observatory, UGR, Spain	Lucas Alados	alados@ugr.es
15-MSY	CSIC Montseny, CSIC, Spain	Andres Alastuey	andres.alastuey@idaea.csic.es
16-HYM	Hyltemossa, ULUND, Sweden	Erik Swietlicki	Erik.swietlicki@nuclear.lu.se
17-CAO	Cyprus Atmospheric Observatory, CYI, Cyprus	Mihalis Vrekoussis	m.vrekoussis@cyi.ac.cy
18-MHD	Mace Head Research Station, NUIG, Ireland	Colin Odowd	colin.odowd@nuigalway.ie

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

3. Project dates
Indicate the first and last day the infrastructure is accessed by any person of the user group.

4. Project description
Please limit the text to the recommended length. If required, you may add supplementary information either in the section "Comments" or in the email to the ACTRIS Coordination office. The Coordination Office will decide whether the information is relevant to be included for the review.

- **Scientific objectives:** Give a concise and clear outline of the objectives that you want to achieve and the specific aims of the project by making reference to its scientific relevance. Identify the gaps the project is intended to fill, state your motivation and importance of your planned research and your reasons for choosing the specific infrastructure.
- **Work plan:** Provide a succinct and accurate description of your plan for achieving the goals in the given time frame, the methods employed, the experimental set-up foreseen, any additional information about planned time table and your justification of training benefit and mobility. The work plan should include sufficient information needed for evaluation of the project.
- **Data management:** Data from measurements at ACTRIS observational facilities are archived in the ACTRIS Data Centre for long-term storage and access. The ACTRIS Data Centre also offers to archive data resulting from TNA activities. This is optional, and the data can be password-protected. The default embargo time is 1 year after the submission of quality assured data to the ACTRIS topic data base. This can be adjusted in accordance with the data submitter's needs, during the submission processes. The ACTRIS Data Policy is available from: http://actris.nilu.no/Content/Documents/DataPolicy.pdf. For data management it is helpful if you included a list of instruments you plan to bring to the site.

5. Participants' Employing Organization / Home Institution

Institution legal status
Please select:

- UNI: University and higher education
- RES: Public research (including international research organizations and private research organization controlled by a public authority)
- SME: Small Medium Enterprise
- PRV: Other industrial and/or profit private organization
- OTH: Other

6. Participants' information:

- All participants needed to carry out the project and accessing the infrastructure should be listed here.
- A TNA is not possible if the home country of the Principal Investigator's affiliated institution is located in the same country as the host infrastructure ('trans-nationality aspect').
- Position: select the appropriate research status (or equivalent): UND=Undergraduate, PGR=Post-Graduate (student with a first University), PDOC= Post-doctoral researcher (PhD completed within last 5 years), TEC= Technician (or engineer), EXP=Experienced (professional) researcher, senior scientist.
- New user: select 'Yes' if the user has never visited the infrastructure before this specific project. Priority is given to user groups involving new users (users that have never used the infrastructure before or users from institutions/countries that would normally not have access to such unique research facility, e.g., scientists from Central and Eastern European countries).
- Indicate first/last day of TNA (dd/mm/yyyy). If your access to the infrastructure is not continuous, indicate periods on separate lines.
- Indicate the TNA duration in days. The access may be non-continuous and may include days (or half-days) for installation, tests, dismantling (max 20%). Do only include actual days of access to the infrastructure and relevant to the project. Please round to minimum half day (*e.g., 2 or 2.5 or 3, etc.)*. The number of access days will have to be justified for reimbursement.
  The total duration of TNA will have to be included.

Activity domain
Please select:

- Physics

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

- Chemistry
- Life sciences & Biotech
- Earth sciences & Environment
- Engineering & Technology
- Mathematics
- Information & Communication Technologies
- Material sciences
- Energy
- Social sciences
- Humanities

Position
Please select:
- UND = Undergraduate
- PGR = Post-graduate, student with 1st university degree
- PDOC = Post-Doctoral Researcher
- TEC = Technician
- EXP = Experienced, professional researcher

Estimated project costs
List your real estimated costs for all participants included in the table above. Financial support from ACTRIS-2 to the project user group is intended to facilitate TNA but cannot guarantee full reimbursement of travel expenses of the participating users. It is only available upon request. Please note that:
- Independent from the number of participants, financial support will be decided on a case-by-case basis but will mostly be limited to 2 equivalent persons per project (*e.g., in a project lasting two weeks: 2 persons x 14 days or 4 persons x 7 days etc.*).
- Financial support to travel and subsistence to the user group depends on the host infrastructure, calculations may vary and are based on the availability of funding from the European Commission and on the applicable rates of the accounting practices of the institution in charge of the host infrastructure. The final grant is a maximum amount and will be decided after the evaluation results in agreement with the access provider.
- Instrument transport will not be reimbursed except for TNA to MAIDO-OPAR where some instrument transport is eligible, please include the additional expected costs in the comment section.

Reimbursement of the grant will usually be done after project completion and after submission of all requested documentation to the Coordination Office. Reimbursement is made via the host institution and will require proper justification (original tickets, receipts, etc.) according to the regulation applied to by the host institution. Please contact the access provider for details.

Comments
Comments are optional. You many include any additional information you consider pertinent for the TNA project or evaluation.

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

Appendix B: Members of the TNA user selection panel

External members (52)		Aerosol Profile	Cloud Profile	Near surface aerosol	Trace gases
John Ogren	NOAA, USA	x	x	x	x
Kevin Strawbridge	Environment Canada, Canada	x			
Belay Demoz	Howard University, USA	x			
Juan Carlos Antuna	Optic Atmo Group Camageuy, Cuba	x			
Nubuo Sugimoto	NIES, Japan	x			
Atsushi Shimizu	NIES, Japan	x			
Klaus Schäfer	KIT, Germany	x			
Dimitris Balis	Aristotle University Thessaloniki, Greece	x	x		
Alex Papayannis	NTUA, Greece	x	x		
Andreas Behrendt	Universität Hohenheim, Germany	x	x		
Eduardo Landulfo	IPEN/CNEN-SP, Brazil	x	x		
Elian Wolfram	CEILAP-UNIDEF, Argentinia	x			
Joshua Vande Hey	University of Leicester, UK	x			
Marco Iarlori	CETEMPS, Italy	x			
Alexander Haefele	MeteoSwiss, Switzerland	x			
Igor Veselovskii	General Physics Institute, Russia	x			
Smadar Egert	Tel Aviv Univ, Israel	x			
Jaqueline E. Russell	Imperial Coll London, UK		x		
Dominique Ruffieux	MeteoSwiss, Switzerland		x		
Johannes Verlinde	PennState Univ, USA		x		
Richard Forbes	ECMWF, UK		x		
Hester Volten	RIVM, Netherlands	x		x	x
Paul Williams	Univ Manchester, UK			x	
Paul Quincey	National Physical Lab, UK			x	

External members (cont'd)		Aerosol Profile	Cloud Profile	Near surface aerosol	Trace gases
Astrid Kiendler-Scharr	FZ Jülich, Germany			x	
Atshushi Matsuki	Kanazawa Univ, Japan			x	
Paulo Fialho	Azores Univ, Portugal			x	
Kostas Eleftheriadis	NCRS Demokritos, Greece			x	
Henrik Skov	Aarhus Univ, Demark			x	x
Annele Virtanen	University of Eastern Finland, Finland			x	x
Paul Zieger	Stockholm University, Sweden			x	
Frank Zimmermann	TU Bergakademie Freiberg, Germany			x	
Shao-Meng Li	Environment Canada			x	
Trish Quinn	NOAA, USA			x	
Zoran Ristovski	Queensland Univ of Technology, Australia			x	
Javier Crespo	UMH, Spain			x	
Jesu de la Rosa	UHU, Spain			x	
Helmuth Horvath	University of Vienna, Austria			x	
Regina Hitzenberger	University of Vienna, Austria			x	
Joseph Prospero	University of Miami, USA			x	
Andreas Volz-Thomas	FZ Jülich, Germany				x
Theo Brauers	FZ Jülich, Germany				x
Stéphane Sauvage	Mines Douai, France				x
Sébastien Dusanter	Mines Douai, France				x
Jonathan Williams	MPI-C Mainz, Germany				x
Barbara Barletta	Univ California Irvine, USA				x
Johannes schneider	MPI-C Mainz, Germany				x

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

Internal members (52)

Name	Institute	(1) Aerosol Profile	(2) Cloud Profile	(3) Near surface aerosol	(4) Trace gases
Paolo Laj	CNRS	x	x	x	x
Gelsomina Pappalardo	CNR	x	x	x	x
Adolfo Comeron	UPC	x			
Albert Ansmann	TROPOS	x			
Fabio Madonna	CNR-IMAA	x	x		
Erik Swietlicki	ULUND	x		x	x
Volker Freudenthaler	LMU	x			
Doina Nicolae	INOE	x			
Lucas Arboledas	UGR	x		x	
Ewan O'Connor	FMI	x	x		
Susanne Crewell	RIUUK	x	x		
Arnoud Apituley	KNMI	x			
Dave Donovan	KNMI	x	x		
Dmitri Moisseev	UHEL	x	x		
Marco Pandolfi	IDAEA-CSIC	x			
Manuel Pujadas	CIEMAT	x		x	
Francisco José olmo Reyes	UGR	x		x	
Juan Luís Guerero Rascado	UGR	x			
Alberto Cazorla Cabrera	UGR	x			
Jean-Charles Dupont	CNRS-IPSL	x	x	x	x
Guiseppe D'Amico	CNR-IMAA	x			
Mihalis Vrekoussis	CYPRUS	x	x	x	x
Ulrich Loehnert	RIUUK		x		
Anthony Illingworth	UREAD		x		
Herman Ruschenberg	TUD		x		
Fabrizia Cavalli	JRC			x	
Bas Henzing	TNO			x	
Heikki Lihavainen	FMI			x	x
Nicolas Bukowiecki	PSI			x	
Martin Gysel	PSI			x	
Hanna Manninen	UHEL			x	
Valdimir Zdimal	ICPF			x	
Jaroslav Schwarz	ICPF			x	
Marco Pandolfi	IDAEA-CSIC			x	
Mar Viana	IDAEA-CSIC			x	
Emilio Cuevas	AEMET			x	x
Begoña Artiñano	CIEMAT			x	
Sergio Rodríguez	AEMET			x	
Angela Marinoni	CNR-ISAC			x	
Karine Sellegri	CNRS-LAMP			x	
Evelyn Freney	CNRS-LAMP			x	
Stefan Reimann	EMPA				x
Christian Plass-Duelmer	DWD				x
Nikos Mihalopoulos	NOA				x
Anja Werner	DWD				x
Valérie Gros	CNRS-LSCE				x
Alistair Lewis	UYORK				x
Rupert Holzinger	UNIV UTRECHT				x
Stepan Rychlik	CHMI				x
Gerhard Spindler	TROPOS			x	x
Jurgita Ovadnevaite	NUIG	x	x	x	x
Vassilis Amiridis	NOA	x	x		

Appendix C: Documents used within the process of TNA to observation facilities – Review form

TNA Proposal evaluation form for reviewers

Reviewer name:	
Project leader name:	
Project acronym:	

Comments from access provider:	

	Evaluation - Points
Scientific Value	
Originality and scientific quality:	Select...
Interest to scientific community:	Select...
Other (e.g., innovative, technical approach, effective use of infrastructure, etc.):	Select...
Total 1 (Max. 12/20):	0
Users	
Training benefits for the users:	Select...
Expertise of the users (mobility of expert):	Select...
Proportion of new users:	Select...
Female participation:	Select...
Total 2 (Max. 8/20):	0
Total 1 + Total 2 (Max. 20/20):	0

Comments (optional, but appreciated!):

Proposal accepted:	Select...

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

Proposal evaluation guidelines

Scientific value

The assessment of the TNA proposal should be based on its scientific merit and impact on the scientific community as well as on its innovative and technical approach, and not on the financial criteria.

Users

A user refers to any researcher, student, engineer, or technician who needs the support of an advanced research station to carry out a scientific project in the ACTRIS-2 context. Priority should be given to projects providing a potential **training benefit** to the users, or adding value to the infrastructure from **experts**. Also, priority should be given to groups composed of:

- Participants who have not previously used the installation (**new users**);
- Participants who are working **in countries where no equivalent infrastructure exists**.

Furthermore, special attention will be paid to **female participation** in order to promote equal opportunities in the implementation of the TNA activities.

Non-EU Countries:

Transnational access to user groups in which all or most users work in third countries (non-EU member or associated countries) is eligible but may be limited. This limit accounts for 20% of the requested access by third country users with respect to the total quantity of access offered under the grant and is monitored by the coordination office.

Comments

Constructive comments or suggestions to the applicants from the reviewers are not mandatory but can be very important in improving the scientific quality of the work.

Proposal acceptance

A proposal should have at least 10 total points to pass. You may still accept a proposal with less than 10 points if you consider the work worth being supported. In this case please provide a short comment to justify.

Appendix D: Documents used within the process of TNA to observation facilities – Confirmation of Access

Aerosol, Clouds, and Trace Gases Research InfraStructure

The completed and signed form below should be returned by email to actris-co@opgc.univ-bpclermont.fr.

[Host institution and address]

[Name of project leader]
[Home institution and address]

CONFIRMATION OF ACCESS

ACTRIS-2 Trans-National Access

I, [Access provider in charge of the Infrastructure], herewith confirm that the following project was carried out at our infrastructure [name of infrastructure] in the context of ACTRIS-2 Trans-National Access:

["Project acronym"].

The amount of access[1] delivered to the project group (project users) is as follows:

	Participant name	Duration of stay (start – end date)	Amount of access[1]
Project leader:		[dd/mm/yyyy – dd/mm/yyyy]	
Project user 1:			
Project user 2:			
Project user ...:[2]			
		Total amount of access delivered to project group:	

[Location], [Date (dd/mm/yyyy)]

Location and date

Signature of project leader[3]

[Location], [Date (dd/mm/yyyy)]

Location and date

Signature of access provider[3]

[1] *The amount of access is defined as the time, in days, spent by the user at the infrastructure for this project, including weekends and public holidays (e.g., a scientist who spent 4.5 days at the infrastructure must indicate '4.5'). The total amount of access of the group is the sum of access days of each user. Please round to half days where appropriate.*

[2] *Add new rows if necessary.*

[3] *The document must be **1)** Signed by the project leader; **2)** Signed by the access provider; **3)** Sent to the Coordination office by the access provider (please respect order).*

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109

Appendix E: Documents used within the process of TNA to observation facilities – Scientific activity report

1

ACTRIS-2 TNA Activity Report

[*TNA project* title, *Acronym*]

[*Name of Project Leader and co-authors*]

Instructions
Please limit the report to max 3-5 pages, including tables and figures.
The report should be sent as pdf document and include the subheadings listed below. Please make sure to address any comments made by the reviewers (if applicable, you were informed in this case beforehand).
The report will be made available on the actris.eu website. Should any information be confidential or not be made public, please inform us accordingly (in this case it will only be accessible by the EC, ACTRIS-2 project partners, and the reviewers).

- Introduction and motivation
- Scientific objectives
- Reason for choosing station/ infrastructure
- Method and experimental set-up
- Preliminary results and conclusions
- Outcome and future studies
- References

ACTRIS (www.actris.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-INFRAIA-2014-2015, Grant Agreement number: 654109