ACTRIS-2 WP2 Workshop, Barcelona, 7-11 Nov 2016

Monday

14:30 – 14:40 **Welcome and Logistics (Adolfo)**

14:40 – 15:00 **ACTRIS and WP2 Updates (Ulla)**

15:00 – 16:00 **Task 2.1: Optimization of aerosol profiling**

- Status of the network (Lucia + all)
  - General introduction about the status of the network: active, gray and black stations, new stations
  - EARLINET stations tour de table

Coffee and Posters

16:30 – 18:30 **Task 2.1: Optimization of aerosol profiling – Technical session**

- New instruments and capabilities
  - Anatoli Chaikovsky: Antarctic lidar station
  - Juan-Antonio Bravo-Aranda and Christopher Pietras: IPRAL multi-wavelength Lidar technical performance and remaining issues
- Polarization
  - Alejandro Rodríguez-Gómez et al. Depolarization channel for Barcelona Lidar. Implementation and preliminary measurements
  - Volker Freudenthaler:
    Depolarization of different lasers with SHG and THG
    Calculation of the GHK-parameters for the SCC
    How to experimentally determine the optical parameters of the optics
    The importance and the calculation of the systematic errors due to polarization effects of the optics

Tuesday

09:00 – 10:00 **Task 2.1: Optimization of aerosol profiling – Technical Session cont'd**

- Detection and acquisition
  - Patrick Fréville: A test of remote development based on the Licel acquisition software
  - Thomas Trickl: 22 years of experience with small-size Hamamatsu PMTs
- Collaboration with WP6 – LiCal
  - Livio Belegante et al.: Activities at the Lidar Calibration Centre in support of aerosol profiling
  - Aldo Amodeo et al.: ATHLI16: ATHens Lidar Intercomparison campaign 2016

10:00 – 10:30 **Vassilis Amiridis: Status of ACP Special Issue**

Coffee and Posters

11:00 – 13:00 **Task 2.1: Optimization of aerosol profiling**

- EARLINET database (Lucia + all)
  - Database status
  - QC procedures
  - Novelties for files
  - New services
  - Publication status
  - New products and design of further products
  - Ioannis Binietoglou: Feedback from ICAP meeting (Ioannis)

Lunch

14:30 – 16:00 **Task 2.1 cont'd**

- SCC status and planned upgrades (Giuseppe + all)
  - Release of new SCC version 4.0 (Giuseppe)
  - New SCC depolarization products - testing and validation (Ina)
  - SCC new developments (Giuseppe)
  - Automatic cloud masking: workflow and issues (Ioannis)

Coffee and Posters

16:30 – 18:30 **Task 2.1 cont'd**

- Kalliopi-Artemis Voudouri et al.: Long-term comparison of lidar derived optical products between the Single Calculus Chain and the operational algorithm of Thessaloniki
- Training session on SCC v4.0 and calculation of new depolarization products (SCC development team)

Wednesday, Science Day

08:30 – 10:30

- Qiaoyun Hu et al.: Profiling of dust, biomass burning and cirrus clouds in SHADOW2 campaign
- Roberto Román et al.: Using the lunar aureole derived from All Sky cameras for the retrieval of aerosol microphysical properties
- Alberto Cazorla et al.: The Iberian Ceilometer-Radiometer Network: monitoring an exceptional dust event
- Nikolaos Siomos et al.: Investigating the quality of modelled aerosol profiles based on combined lidar and CIMEL data
- Elina Giannakaki et al.: Extinction retrieval using a polarization elastic lidar at Finokalia, Crete
- Nikos Papagiannopoulos: Distance-based classification on EARLINET data
- Doina Nicolae: Aerosol type – a potential new data product from EARLINET standard optical profiles

Coffee and Posters (with demo on aerosol typing by Doina)

11:15 – 13:00

- Iwona S. Stachlewska et al.: Intensive and extensive properties of aerosol particles detected over Warsaw on the basis of long term Raman lidar observations
- Anatoli Chaikovsky: LIRIC for synergetic processing of EARLINET, AERONET and CALIPSO data: method development and testing
- Eleni Marinou: Estimated desert-dust ice nuclei profiles from CALIPSO
- Emmanouil Proestakis: EARLINET validation of CATS L2 product
- Rubén Barragán: Estimation of mineral dust direct radiative forcing at the European Aerosol Research Lidar NETwork site of Lecce, Italy, during the ChArMEx/ADRIMED summer 2013 campaign: Impact of radiative transfer model spectral resolutions
- Juan-Antonio Bravo-Aranda et al.: Aerosol properties over the Paris megacity monitored using a multi-wavelength Raman Lidar

Lunch

14:30 – 16:00

- Gianni Martucci: Water vapour, temperature and aerosol retrievals using RALMO Raman LIDAR at Payerne
- Thomas Trickl: Aerosol in stratospheric intrusion layers
- Martial Haeffelin et al. : Microphysical, radiative, dynamic and thermodynamic processes driving fog and low stratus clouds using ground-based Lidar and Radar measurements
- Anne Hirsikko: Research around cloud radar observation in Finland
- Irina Melnikova: Optical parameters and vertical profiles of cloud layers from airborne passive radiative observations

16:00 – 18:00 Coffee / Lab Tours / Posters / Individual discussions

Thursday

09:00 – 11:00 **Task 2.2: Optimization of cloud profiling**

- Status of the network and the database, planned upgrades and new developments at instrument and algorithm level (Ewan + all)
  - Ewan O'Connor: Overview of network status, new developments and instruments, Cloudnet database, webserver
  - Ulrich Löhnert et al.: Detection of drizzle onset with cloud Doppler spectrum moments
  - Alexander Myagkov and Thomas Rose: Solid state cloud radars for atmospheric research
- Towards a European Radar Calibration Centre (Herman + all)
  - Herman Russchenberg et al.: Drone-based radar calibration at CESAR Observatory: first results
  - John Nicol and Anthony Illingworth: Accurate absolute 35 GHz radar calibration and observed attenuation by wet radomes and antennas
  - Jean-Charles Dupont and Julian Delanoë: Cloud radar calibration activities at the SIRTA Observatory, incl. target calibration, radar inter comparisons, and in-situ vs remote sensing

Coffee and Posters

11:30 – 12:00 **Task 2.2 cont'd**

- Patric Seifert: Evaluation of the cloud radar calibration using in-situ observations of a stratocumulus cloud at ACTRIS site Melpitz
- Ulrich Löhnert et al.: A new calibration load for RPG radiometers

12:00 – 13:00 **Task 2.3: Instrument synergy - new data products and processing for studying cloud-aerosol-dynamics interaction**

- Cloud-aerosol interaction
  - Herman Russchenberg and Karolina Sarna: Cloud-aerosol monitoring at CESAR Observatory
- Wind and turbulence, PBL characterization
  - Ewan O'Connor: Developments in BL classification
  - Martin Radenz: Vertical velocity implementation into Cloudnet

Lunch

14:30 – 15:00 **Task 2.3 cont'd:**

- Pyry Pentikainen et al.: Turbulence intercomparison: Doppler lidar and mast
- Jana Preißler: Performance stability of WindCube 200S at Mace Head, Ireland

15:00 – 16:00 **Task 2.4: EARLINET and Cloudnet in campaigns, support to new members and users**

- Training
  - Doina Nicolae: LiCal training workshops
  - Johannes Bühl: Announcement of the Cloudnet Training School at Limassol (27-31 March 2017)
- Support to campaigns and new sites
  - Ewan O'Connor: Cloudnet support to new sites and campaigns
  - Marco Rosoldi: INTERACT-II measurement campaign at CNR-IMAA to evaluate performances of automated systems for aerosol vertical distribution study
  - Anatoli Chaikovsky: Campaign to test LIRIC developments on EARLINET, AERONET and CALIPSO data

Coffee and Posters

16:30 – 18:30 **Task 2.4 cont'd**

  - Arnoud Apituley: CINDI-2 campaign overview
  - Lucas Alados-Arboledas et al.: Study of the atmospheric aerosol by multiple approaches during SLOPE: Contribution to ACTRIS2 WP11
  - Aleksandra Tsekeri: JRA1 activities in Crete / Cyprus
  - Johannes Bühl: The Cyprus Cloud Aerosol and Precipitation Experiment
  - Vassilis Amiridis: EUFAR/ACTRIS campaigns in April 2017
- Opportunities, external communities, collaboration with WP4 and WP5
  - Vassilis Amiridis: ESA request for needs of future lidar missions
  - Gelsomina Pappalardo: WP2 input for WP4 and WP5, general ACTRIS issues
- Wrap-up (all)

Friday

09:00 – 10:45 **Cloudnet Technical Discussion**

- Introduction and status of the network
  - Tour de table: present current or likely usage of the Cloudnet environment (operational, new algorithm creation, higher-level products...)
- Data transfer and FTP server
  - We need robust forms of automated data transfer, that can be monitored and cope with gaps or re-processing; different solutions used by each group
  - Model data provision, both for standard sites and for campaigns, EARLINET
- Database
  - What goes where in the DB, and what meta-data is required?
  - What do new algorithms require and what is missing from the current files?
  - NRT vs QA/QC data with calibration: How do we deal with intermittent calibration? Manual checking procedures?
  - Publication with DOI. What do we consider a dataset, and when/where do we publish it?
  - THREDDS server and SSO (single-sign-on) for access to standard sites and campaign data

Coffee

11:15 – 13:00 **Cloudnet Technical Discussion (cont.)**

- Webserver
  - Requires full overhaul – what should and should not be available
  - Links to software, news, etc. all need updates
- Data processing
  - Updates or modification suggestions for current processing suite
  - Test dataset for Cloudnet heterogeneity and for meta-data creation
  - Template Matlab script for using when creating new algorithms
  - Source repository for script
  - Versioning system
  - New instrument processing
  - Transition from Matlab to open source software (Python, C)
- Training and help
  - Forum to provide discussion and help
    Cloudnet Training School in Cyprus

Poster sessions

Posters will be exhibited simultaneously during the entire workshop. Authors are expected to be available for discussion during coffee breaks and during the time allotted for individual discussion.

Technical section

1. C.R. Marcos, J.L. Gómez-Amo, M.P. Utrillas, J.A. Martínez-Lozano: Noise level estimation of the RMAN510 analog channel measurements
2. C.R. Marcos, J.L. Gómez-Amo, M.P. Utrillas, J.A. Martínez-Lozano: Electronic background correction of Vaisala CL51 ceilometer at Burjassot, Spain
3. L. Ilic, M. Kuzmanoski, Z. Mijic: Preliminary results of analysis of the lidar measurements in Belgrade
4. D. Balis, N. Siomos, K. Voudouri, V. Freudenthaler: Inspection of the Thessaloniki Lidar for problems in the depolarization measurements and calibration
5. D. Alexiou, A. Papayannis, F. Rocadenbosch, A. Argyrouli, G. Tsaknakis, and P. Kokkalis: Planetary Boundary Layer height variability over Athens, Greece based on the synergy of Raman lidar and radiosonde data: Application of the Kalman filter versus other techniques
6. I. Binietoglou, P. Giampouras, L. Belegante: A fast and precise linear approximation of Rayleigh-Brillouin scattering spectra, suitable for real-time HSRL processing
7. I. Binietoglou, M. Kottas, V. Palea: A new open-source python library for lidar data processing

Scientific section

8. M. Mylonaki, A. Papayannis, R. Mamouri, A. Argyrouli, P. Kokkalis, G. Tsaknakis, and O. Soupiona: Variability of the aerosol optical properties during biomass burning events observed by Raman lidar over Athens, Greece in the period 2007-2016
9. E. Giannakaki et al.: Intercomparing water vapor profiles from a Raman lidar, a satellite and a model in Finland
10. J.A. Benavent-Oltra, R. Román, D. Pérez, M.J. Granados, P. Ortiz Amezcua, J.L. Guerrero-Rascado, A. Lopatin, C. Denjean, B. Torres, D. Fuertes, O. Dubovik, H. Lyamani, F.J. Olmo, M. Mallet, L. Alados-Arboledas: Atmospheric Aerosol Microphysical Profiling: GRASP retrieval versus airborne measurement
11. P. Ortiz-Amezcua, S. Samaras, D. Pérez-Ramírez, J. L. Guerrero-Rascado, C. Böckmann, L. Alados-Arboledas: Lidar stand-alone retrieval of atmospheric aerosol microphysical profiles during CHARMEX
12. I.S. Stachlewska, D. Szczepanik, L. Janicka, H. Baars, R. Engelmann: Biomass burning particles detected by Raman lidar over Warsaw on 10th August 2015
13. M. Rosoldi: Cloud ice caused by atmospheric mineral dust – Parameterization of ice nuclei concentration in the NMME-DREAM model
14. C.R. Marcos, J.L. Gómez-Amo, M.P. Utrillas, J.A. Martínez-Lozano: Operational retrieval of aerosol backscatter profiles from continuous ceilometer measurements over Burjassot EARLINET station
15. C. Córdoba-Jabonero, A. Ansmann, M. Sicard, H. Baars: Application of POLIPHON method to Micro Pulse Lidar observations under dusty conditions: Vertical separation of the optical properties for dust fine and coarse particles and radiative implications
16. D. Bortoli, S. N. Pereira, M. J. Costa, A. M. Silva, P. S. Kulkarni, M. Potes: On the desert dust aerosols over Évora - Surface, columnar, and profiling of optical and microphysical properties

Task 2.2 section

17. G. Clain and J. Delanoë: BASTA Doppler Cloud radar: multiple size and sensitivities, mobile, scanning

Task 2.3 section

18. L. Belegante: Magurele center for Atmosphere and Radiation Studies (MARS)
19. R. Gierens, M. Costa-Surós, A. Hansen, U. Löhnert, S. Crewell: Comparing Cloudnet classification of mixed-phased clouds to high resolution cloud resolved model

Task 2.4 section

20. G. de A. Moreira, J. L. Guerrero-Rascado, P. Ortiz-Amezcua, Román R. Benavent-Oltra, L. Alados-Arboledas: Atmospheric turbulence during SLOPE using Doppler and Elastic lidar
21. D. Mamali, E. Marinou, M. Kottas, I. Binietoglou, P. Kokkalis, A. Tsekeri, V. Amiridis, M. Pikridas, J. Sciare, S. Bezantakos, A. Ansmann, R. Engelmann, H. Russchenberg, G. Biskos: Comparison of dust mass concentration profiles from LIDAR and in situ (UAV) measurements over Cyprus during INUIT-BACCHUS-ACTRIS 2016 Campaign