**ACTRIS-CZ**

**the national contribution to the Pan-European research infrastructure**

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- ACTRIS – participation of the Czech Republic (ACTRIS-CZ) Research Infrastructure represents a national node of the existing pan-European research infrastructure ACTRIS (Aerosol, Clouds and Trace gases Research Infrastructure).
- ACTRIS-CZ RI is supported by the Czech Ministry of Education, Youth and Sports
- ACTRIS-CZ is included into the Roadmap for Large Research, Development and Innovation Infrastructures in the Czech Republic.
- The potential of ACTRIS-CZ is formed by the National Atmospheric Observatory Košetice and by research and operating supplement of institutes implementing their research and monitoring activities.
- ACTRIS-CZ comprises unique research infrastructure focused on the long-term background monitoring and research of physical and chemical processes in the atmosphere including long-range transport in the Czech Republic.
- Actually the Czech Republic is one of the first European countries where the ACTRIS and ICOS activities are coordinated at the same site. Moreover, National Atmospheric Observatory Košetice is included in a wide range of other pan-European and global networks.

### Background description

- **Type of site:** rural background
- **Co-ordinates:** N 49°35’, E 15°05’
- **Elevation:** 534 m a. s. l.
- **Climate characteristic (1961–1990):**
  - mean temperature: 7.1 °C
  - annual precipitation: 621 mm
  - average wind speed: 3 m/s
  - prevailing wind direction: western

### Infrastructure is formed by:

**Hosting institution:**
- CHMI - Czech Hydrometeorological Institute - operates Košetice Observatory (long-term air quality monitoring and meteorological measurements since 1988)

**Partner institutions:**
- GCRI - Global Change Research Institute AS CR operates the Atmospheric station (250 m high atmospheric mast)
- ICPF - Institute of Chemical Process Fundamentals AS CR - special aerosol measurements
- RECETOX - Research Centre for Toxic Compounds in the Environment - focused on persistent organic pollutants (POPs)

### Participation in other international monitoring programmes

<table>
<thead>
<tr>
<th>Programme</th>
<th>Website/Link</th>
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<tr>
<td>EMEP</td>
<td>(Co-operative Programme for Monitoring and Evaluation of Long-range Transmission of Air Pollutants in Europe) <a href="http://www.emep.int">www.emep.int</a></td>
</tr>
<tr>
<td>GAW</td>
<td>(Global Atmosphere Watch) <a href="http://www.wmo.ch/web/arep/gaw">www.wmo.ch/web/arep/gaw</a></td>
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<tr>
<td>ICP-IM</td>
<td>(International Co-operative Programme on Integrated Monitoring) <a href="http://www.environment.fi/syke/im">www.environment.fi/syke/im</a></td>
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<td>GMOS</td>
<td>(Global Mercury Observation System) <a href="http://www.gmos.eu">www.gmos.eu</a></td>
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<tr>
<td>InGOS</td>
<td>(Integrated Non-CO Greenhouse gas Observing System) <a href="http://www.ingos-infrastructure.eu">www.ingos-infrastructure.eu</a></td>
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<tr>
<td>GAPS</td>
<td>(Global Atmosphere Passive Sampling Network) <a href="http://www.ec.gc.ca/rs-mn">www.ec.gc.ca/rs-mn</a></td>
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<tr>
<td>MONET</td>
<td>(Long-term Monitoring of POPs in Atmosphere by Passive Sampling Technique) <a href="http://recetox.muni.cz">http://recetox.muni.cz</a></td>
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### Future development

- The development is planned in line with the long-term goals of pan-European ACTRIS RI.
- A significant enhancement is planned in research of the surface-atmosphere exchanges of aerosols.
- More attention will be paid to the monitoring and research on the aerosol optical properties having influence on the climate issues.
- The long-term development of aerosol measurements will continue with on-line monitoring and chemical analysis of aerosol source tracers and precursors of secondary aerosols.

### Offered access to measurements

- in-situ chemical, and physical properties of aerosols (particle number size distribution, aerosol light absorption, aerosol light scattering, OC/EC, size-resolved chemical composition, size-resolved aerosol hygroscopcity)
- vertical gradient of GHGs (CO₂, CH₄, CO, NOₓ), air quality (O₃, Hg) and meteorological parameters at 10, 50, 125, 230 and 250 m, flask sampling of CO₂, H₂, H₂S, NOₓ, CO₂, CH₄, CO, O₃ in CO₂ – at 250 m
- Ecosystem Station (eddy covariance system measuring energy and matter fluxes; net radiation, PAR radiation and meteo. parameters)
- air quality automatic measurements (NO-x, NO, NO₂, ozone, SO₂, CO, PM₁₀, PM₂.₅, PM₁.), air quality manual measurements (VOCS, PANs, PM₁₀, PM₂.₅, Basic cations)
- precipitation chemistry
- meteorological measurements

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