

Atmospheric Station Kresin u Pacova, Czech Republic: Measurements, sampling design, footprint and cooperation

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A spatially distributed climate change research infrastructure was constructed in the Czech Republic in the last years and includes the Atmospheric Station (AS) Kresin u Pacova. The AS consists mainly of a 250 m tall atmospheric tower built primarily for scientific purposes following ICOS (Integrated Carbon Observation System) recommendations. Ground-based measurements (aerosol physical properties) started in 2012 and first vertical gradient measurements in 2013. Greenhouse gases are measured since autumn 2014. The vertical sampling design is of two basic types: lines transporting samples to analyzers placed in the ground based container (greenhouse gases) and analyzers placed directly on the tower (tropospheric ozone, mercury). The AS measurements are representative for the Central European rural background and reflect the composition of air masses transported predominantly from the western direction. The most important research and monitoring activity of the AS is the long-term measurement of greenhouse gases and their exchange dynamics under ICOS. Other monitoring programme and project cooperations include InGOS, ACTRIS and ACTRIS-2 (Aerosols, Clouds, and Trace Gases Research Infrastructure Network), GMOS (Global Mercury Observation System), EMEP (European Monitoring and Evaluation Programme), GAW (Global Atmosphere Watch) and ISKO (Czech Information System on Air Quality).