



ATMOSPHERIC STATION

Křešín u Pacova

MAIN MONITORING AND RESEARCH AREAS

- Long-term measurement of greenhouse gases concentrations and their exchange dynamics
- Investigating the impact of atmospheric aerosols on global climate change processes
- Investigating the impacts of global climate change on air quality and long-range transport of atmospheric pollutants
- Tall tower construction and statics

Multidisciplinary research is supported by further adjacent monitoring and research infrastructures:

- Košetice Observatory
- ICOS Ecosystem Station in nearby agroecosystem
- Small hydrological catchment Anenský brook

The AS Křešín u Pacova is an open access research infrastructure. Proposals about further monitoring and research activities in the above mentioned and other fields are welcome (see contacts).

PARTICIPATION IN INTERNATIONAL MONITORING PROGRAMMES

Core Partnership in ICOS

Integrated Carbon Observation System
www.icos-infrastructure.eu

Associated Partnership in InGOS

Integrated Non-CO₂ Greenhouse gas Observing System
www.ingos-infrastructure.eu

Associated Partnership in GMOS

Global Mercury Observation System
www.gmos.eu

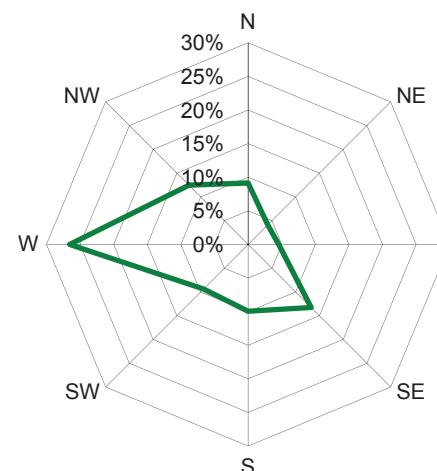
GENERAL INFORMATION

Co-ordinates: N 49°35', E 15°05'
Elevation: 534 m above mean sea level
Type of site: rural background

BASIC CLIMATE CHARACTERISTICS (1961 – 1990)

- mean air temperature: 7.1 °C
- days with max. temperature > 30°C: 4 per year
- days with max. temperature > 25°C: 27 per year
- days with min. temperature < 0°C: 118 per year
- days with max. temperature < 0°C: 34 per year
- prevailing wind direction: western
- average wind speed: 3 m s⁻¹
- annual precipitation: 621 mm
- days with snowfall: 58 per year
- days with snow cover: 66 per year
- mean hours of sunshine: 1800 per year

WIND ROSE 1988 – 2012



CONTACT

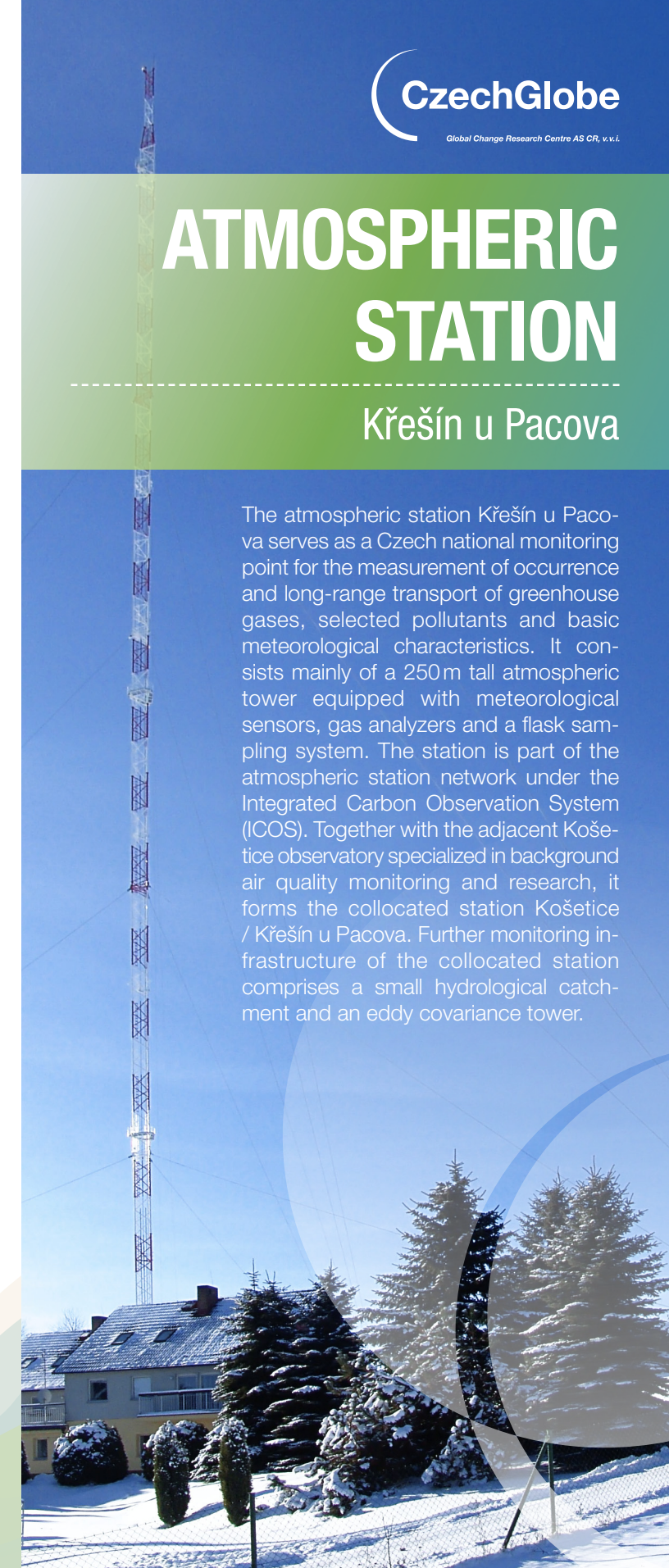
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MONITORING PROGRAMME

GREENHOUSE GASES

- Carbon dioxide (CO₂, continuous measurements)
- Carbon monoxide (CO, continuous measurements)
- Methane (CH₄, continuous measurements)
- Nitrous oxide (N₂O, continuous measurements)
- Sulfur hexafluoride (SF₆, episodic measurements)
- Carbon and oxygen isotopes (¹³C, ¹⁸O and ¹⁴C in CO₂, episodic measurements)
- Oxygen and nitrogen ratio (O₂/N₂, episodic measurements)



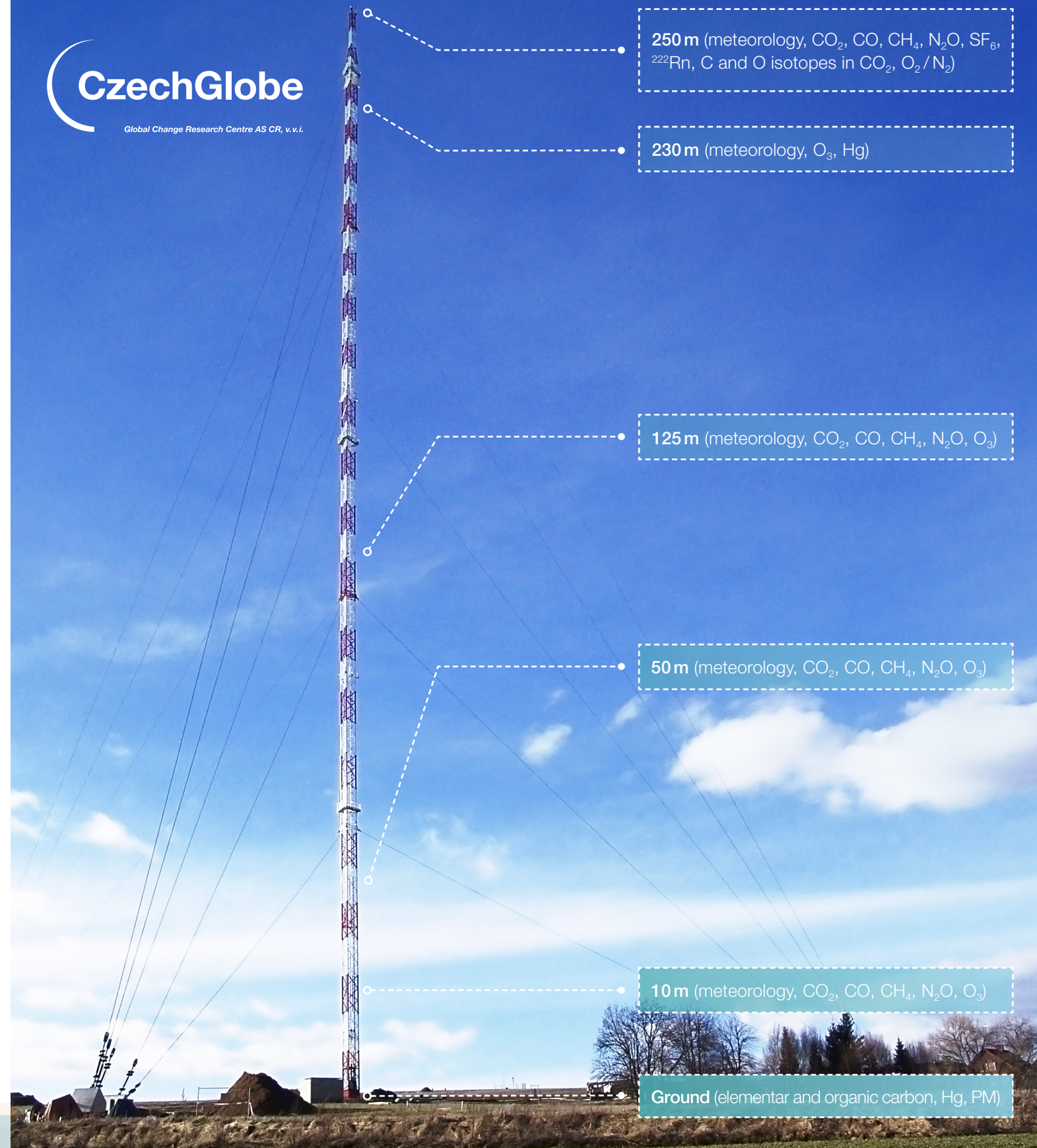
AIR QUALITY

- Elementary and organic carbon (EC/OC, semi-continuous measurements)
- Tropospheric ozone (O₃, continuous measurements)
- Total gaseous mercury (Hg, continuous measurements)
- Radon (²²²Rn, episodic measurements)
- Atmospheric aerosols (light absorption and light-scattering coefficient)

METEOROLOGICAL PARAMETERS

- Wind speed
- Wind direction
- Air pressure
- Air temperature
- Relative humidity
- Planetary boundary layer height

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250 m (meteorology, CO₂, CO, CH₄, N₂O, SF₆, ²²²Rn, C and O isotopes in CO₂, O₂/N₂)

230 m (meteorology, O₃, Hg)

125 m (meteorology, CO₂, CO, CH₄, N₂O, O₃)

50 m (meteorology, CO₂, CO, CH₄, N₂O, O₃)

10 m (meteorology, CO₂, CO, CH₄, N₂O, O₃)

Ground (elementar and organic carbon, Hg, PM)

ADJACENT RESEARCH INFRASTRUCTURES

The Košetice Observatory run by the Czech Hydrometeorological Institute was established in 1988 as a background station specialized in air quality monitoring and research. It represents the Czech Republic in activities under the Convention on Long-Range Transboundary Air Pollution and World Meteorological Organization and in several international monitoring and research projects (EUSAAR, ACTRIS).



The Anenský brook catchment is a part of the International Cooperative Programme on Integrated Monitoring of Air Pollution Effects on Ecosystems. Monthly data on precipitation and stream water chemistry are available since 1994.



This ICOS Ecosystem station uses a standard methodology (eddy covariance) to monitor matter and energy fluxes between the local agroecosystem and the atmosphere. Micrometeorological and biomass parameters and nutrient contents are measured, too.