



EARTH SYSTEM DATA EXPLORATION



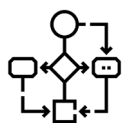
- Explores the use of large-scale deep learning methods for analysing and forecasting atmospheric data. Its thematic focus is on air quality and weather.
- Develops new big data solutions with the objective to enhance FAIRness of access to Earth system data on High Performance Computing systems.

Deep learning for weather and air quality

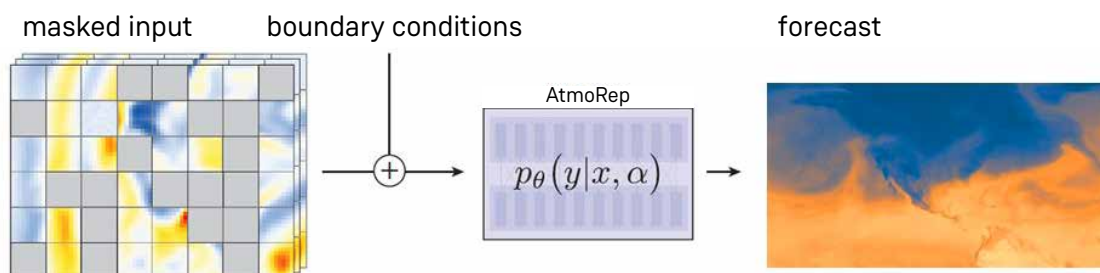


- Developing large-scale machine learning methods for weather and air quality analysis
- Atmospheric representation learning
- Fusion of observations, geospatial data and numerical simulation output
- Scalable deep learning on HPC systems
- Reproducible and fully documented machine learning data pipelines and applications

Earth system data and workflows



- Provision of harmonized and quality controlled global data of air pollutants and meteorological quantities
- Standardised analysis methods and machine learning workflows for air quality assessments as a service
- Contributions to the international Tropospheric Ozone Assessment Report (TOAR)
- Operation-ready scalable large-data workflows



Atmorep: a stochastic foundation model of atmospheric dynamics