

Research fields I

Investigation of various processes in the Earth's upper troposphere and stratosphere:

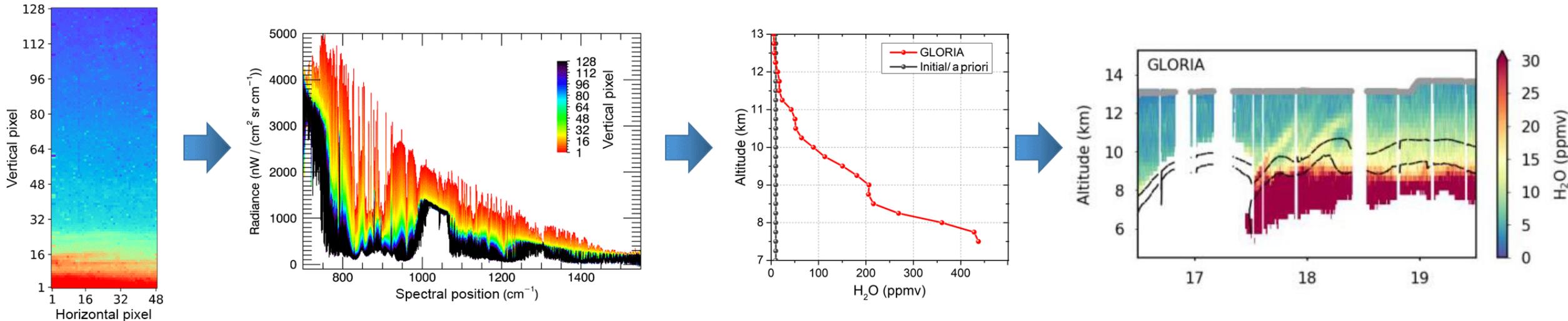
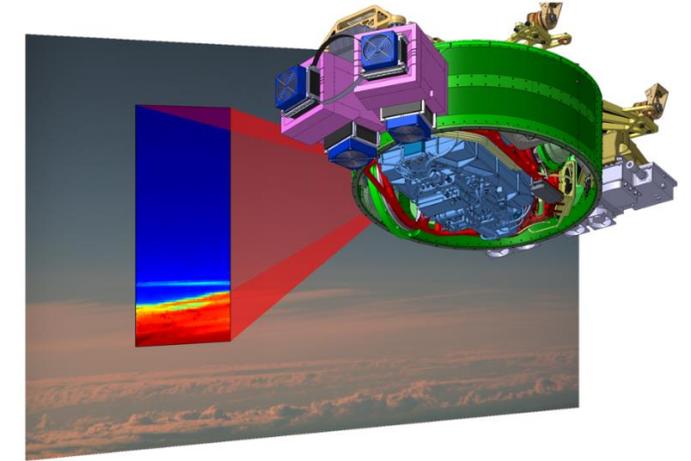
→ Most important altitude region for climate and the ozone layer

Method:

Remote sensing using infrared Fourier transform spectroscopy

Retrieval of temperature and trace gas distribution

Comparison to models



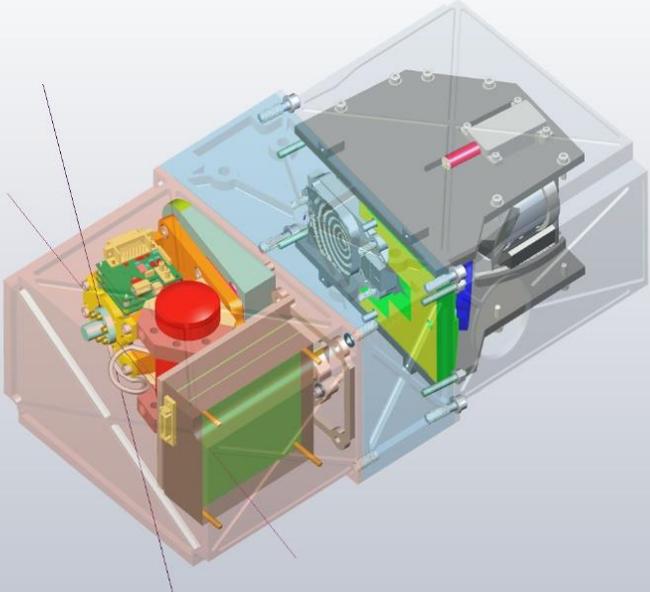
Research fields II

Development of novel infrared imaging Fourier spectrometers for remote sounding of atmospheric trace gases and aerosols

GLORIA-Aircraft since 2012



Currently under development:
GLORIA-LITE
~ 2024



GLORIA-Balloon since 2021



Possible Bachelor / Master theses:

Research fields I:

- Retrieval of nitrogen and chlorine containing trace gases in the stratosphere and comparison to previous measurements
- Comparison of measured vmr vertical profiles with atmospheric model simulations
- Detection of biomass burning species and identification of possible emission sources
- More themes on demand

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Research fields II:

- Contribution to instrument development of GLORIA-LITE, e.g.:
 - Optical performance testing of interferometer
 - Qualification of Infrared Large Focal Plane Array Detector
 - Environmental testing in a thermal-vacuum-chamber
- Development of data analysis tools (in Python)
- More themes on demand

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