



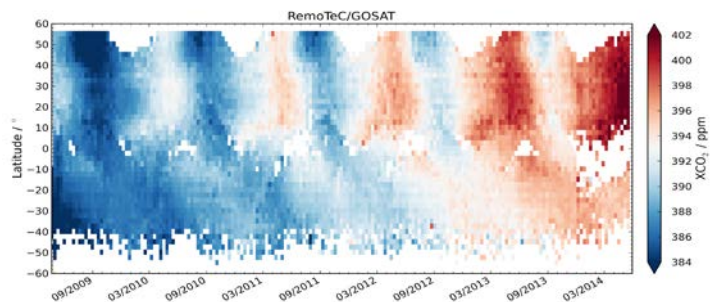
The department of Atmospheric Remote Sensing at the Institute of Atmospheric Physics (IPA), Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), at Oberpfaffenhofen, Germany, invites applications for a

### Ph.D. position on

### Satellite remote sensing of greenhouse gases - carbon dioxide retrievals from NASA's OCO-2

Observing and understanding the global distribution of the man-made greenhouse gases carbon dioxide and methane is one of the key science questions addressed by our institute. We develop instruments, algorithms, and models to better quantify sources and sinks of greenhouse gases and to enable carbon monitoring in the future.

We explore radiative transfer methods to retrieve the global concentration fields of carbon dioxide from spectroscopic measurements of the Japanese GOSAT (Greenhouse Gases Observing Satellite) and NASA's OCO-2 (Orbiting Carbon Observatory). The Ph.D. aims at further improving on the accuracy of our concentration retrievals by enhancing the capabilities of our radiative transfer model. Work will focus on scattering of sunlight by atmospheric aerosols and cloud particles. Given that the OCO-2 satellite orbits in formation with others satellites of the A-Train, synergistic use of others instruments such as the CALIOP LIDAR is a promising option to be investigated.



Time-series of zonally averaged carbon dioxide concentrations measured by GOSAT.

#### Tasks:

- Development of a radiative transfer and retrieval technique for carbon dioxide measurements from OCO-2
- Synergistic use of passive as well as active remote sensing systems
- Analysis of improved accuracy by comparison to correlative ground-based observations
- Implications for future satellites and constellations

We are looking for a Ph.D. student with a keen interest in atmospheric physics, radiative transfer, and spectroscopic remote sensing.

#### Essential skills:

- Master degree in physics, meteorology or equivalent
- Programming knowledge, preferably in FORTRAN, Python
- Knowledge in atmospheric physics
- Experience with passive and/or active remote sensing
- Excellent English language skills
- Willingness to collaborate with external partners, willingness to travel

The position is awarded for 3 years (payscale TVöD-13 50%). Interested candidates should send a complete application package (CV; cover letter describing background, training and research interests; certificates; list of publications, contact information of a referee) as a single PDF to Prof. André Butz (andre.butz@dlr.de). Applications are being accepted immediately. The position is open until filled.

For further information please contact Prof. André Butz (andre.butz@dlr.de).