



Linder Höhe  
D-51147 Köln  
Telephone: +49 (0)2203 601-0  
Internet: <https://www.dlr.de>

Kennedyallee 50  
D-53175 Bonn  
Telephone: +49 (0)228 882-0  
E-mail: [dlr-daad-program@daad.de](mailto:dlr-daad-program@daad.de)  
Internet: <https://www.daad.de/dlr>

## DLR – DAAD Fellowships

Fellowship No. 640

<b>Research Area :</b>	Aeronautics/ Space
<b>Research Topic:</b>	<b>Estimating Methane Emissions and Mass Fluxes from Oil &amp; Gas and Waste Industry in Oman Using Top-down Remote Sensing, Bottom-up Inventory Approaches and in-situ Measurements in combination with local and regional modelling</b>
<b>DLR Institute:</b>	Institute of Atmospheric Physics, Oberpfaffenhofen, Germany
<b>Position:</b>	Doctoral Fellow
<b>Openings:</b>	1
<b>Job Specification:</b>	<p>Methane is one of the most potent greenhouse gases after carbon dioxide and the focus of worldwide initiatives to combat global warming. Within the framework of the Global Methane Pledge and the Oil &amp; Gas Methane Partnership 2.0 (OGMP 2.0), companies in the Oil &amp; Gas (O&amp;G) and waste sector have committed to monitor and to reduce their methane emissions. One of the committed countries is Oman. In 2023, DLR conducted the first airborne field experiment in Oman measuring methane emissions from the O&amp;G and waste sector. This airborne data set will serve as a base for this PhD work. In addition, available satellite data for Oman will be analysed and supported by modelling activities to estimate and verify methane emissions and flux rates. Top-down approaches (based on remote sensing and airborne measurements) will be compared to bottom-up inventory approaches. Local and regional modelling of methane is foreseen (WRF-Chem and/or MECO(n) model). By comparing the collected data (top-down approach) with methane mass flux estimates provided by the industry (bottom-up approach), the involved companies and related governments can be supported in prioritizing their methane emission mitigation actions and policies for future endeavours. Finally, recommendations on reductions of specific, pronounced methane sources in Oman will follow to achieve the goals committed in the Global Methane Pledge and OGMP 2.0.</p>

**Required Qualification:** Master degree in Environmental Engineering  
Good skills in English language

**Advantageous Skills:** Experience in satellite data handling  
Experience in trace gas measurement techniques  
Experience in participating in field experiments  
Experience in programming (e.g. Python)  
Experience in modelling  
Teaching/presentation experience  
Capacity for teamwork  
Ability to work independently  
Committed to the environment  
Knowledge in Atmospheric Physics

**English competence:** See requirements on [www.daad.de/dlr](http://www.daad.de/dlr)

**Earliest Start Date:** 01.06. 2024

**Application Deadline:** until position filled

**Name of supervisors:** Dr. Heidi Huntrieser (Heidi.Huntrieser@dlr.de)

**Further Information:** <http://www.dlr.de>  
<http://www.daad.de/dlr>