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DLR – DAAD – Fellowships

Fellowship No. 292

Research Area : Space

Research Topic: **Supporting Global Urban Monitoring based on Combined Exploitation of Sentinel-1, Sentinel-2 and Landsat-8 Imagery**

DLR Institute: **Deutsches Fernerkundungsdatenzentrum (DFD), Oberpfaffenhofen**

Position: Doctoral Fellow

Openings: 1

Job Specification: The rapid global expansion of human settlements represents one of the major challenges to future sustainable development. Currently, more than half of the world's population lives in cities and by the year 2030 this proportion will increase to about two-thirds. However, the phenomenon is not solely limited to the sprawl of cities and towns (urbanisation), but also includes the spreading of rural settlements. To help identifying and analysing drivers, dynamics, and impacts of global human settlements development the DLR has initiated the Global Urban Footprint (GUF) activity. This initiative aims at the provision of up-to-date and spatially consistent data on the status and characteristics of global human settlements in a unique spatial resolution and thematic spectrum.
The objective of the PhD position is the development, implementation and assessment of new automatic techniques and algorithms that help to enlarge the current portfolio of global GUF layers (GUF+ Suite). Here, the focus will be set on the synergistic analysis of open and free Sentinel-1, Sentinel-2 and Landsat-8 data to detect settlements from new image acquisitions as well as from archive data as a basis for change detection, and to further characterise the built-up structure in terms of imperviousness/greenness or building density. In addition, the implementation of new data sources (e.g., Twitter, Open Street Map) shall be investigated.

Required Qualification:	Master in Geosciences, Environmental Sciences, Geomatics, Geodesy or similar disciplines, with a strong background in remote sensing (data processing, analysis and application) and Geographical Information Systems (GIS).
Advantageous Skills:	Good skills and in programming (e.g., C++, Python, R, Java) and experience in urban and/or spatial planning.
English competence:	Advanced knowledge (speaking, reading, and writing) required.
Earliest Start Date:	As soon as possible
Application Deadline:	Until position is filled
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