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DLR – DAAD – Fellowships

Fellowship - No. 194

- Research Area :** Space
- Research Topic:** *Adaptive Optics Systems for Communications*
- DLR Institute:** Institute of Communications and Navigation; Oberpfaffenhofen
- Position:** Postdoctoral Fellow
- Job Specification:** Optical free-space communication is strongly influenced by atmospheric turbulence, which induces signal fades but also distortions of the beam wave-front. The effect of wave front distortion can be mitigated by adaptive optics (AO) systems, as they are used in astronomy. Optical free-space communications needs different solutions than astronomy. Communicating with LEO satellites implies working also at low elevation angles, where the impact of the atmosphere becomes very strong. Under these conditions amplitude zero points and phase branch points are observed. Traditional wave-front sensors are more sensible to strong turbulence and produce errors when reconstructing in presence of branch-points.
The main task will be research on AO system configurations that can be better applied in the laser communication domain, and the realization of a closed-loop AO system that can correct atmospheric distortions in real-time.
- Required Qualification:** Degree in Electrical Engineering / Information Technology, Physics, or similar fields with superior qualification
Experience in C++, Matlab
- Advantageous Skills:** Experience in Signal Processing, Image Processing, knowledge on AO systems or wave-front sensors, experience in laboratory environment
- Language competence:** English fluent, German at least basic with willingness for improvement
- Application Deadline:** until position filled
- Further Information:** <http://www.dlr.de/kn>
<http://www.daad.de>