

## Helmholtz Call for Chinese Applicants Interested in Running for CSC 2021 Fellowship

- Helmholtz Centre:** Forschungszentrum Jülich GmbH – [www.fz-juelich.de](http://www.fz-juelich.de)
- Department/Institute:** Institute for Bio- and Geosciences, Agrosphere (IBG-3)  
[https://www.fz-juelich.de/ibg/ibg-3/EN/Home/home\\_node.html;jsessionid=BF7772AE0AE5A095C46B15AF95A49636](https://www.fz-juelich.de/ibg/ibg-3/EN/Home/home_node.html;jsessionid=BF7772AE0AE5A095C46B15AF95A49636)
- Supervising scientist:** Dr. Alexander Graf, Prof. Dr. Nicolas Brüggemann
- University for registration or for a future degree:** University of Bonn
- Research Field:** Micrometeorology / Land surface-atmosphere interactions
- Position open for:** **PhD Student**  **Sandwich PhD Student**
- Title of the research:** Forests in a changing climate

**More description of research topic:**

The PhD student will examine interactions between forests, climate, and land use, using a mixture of

- available flux (e.g. CO<sub>2</sub> uptake and evapotranspiration) measurements both from the host institute's own past and present measurements, and from FLUXNET
- own measurements to be carried out by the PhD student, e.g. using the eddy-covariance and/or chamber method(s)
- models including gap-filling and source partitioning models, footprint models and possibly climate and/or land surface models or their results

Possible topics to be examined include

- effect of inter- and intra-annual variability as well as long term trends in meteorological / climatological variables, e.g. drought events, on productivity and climate resilience
- land use change and indirect effects such as bark beetle calamities
- comparison of differently composed or managed forests to each other and to other ecosystems in terms of climate change resilience and mitigation potential

**Specific requirements:**

- very good English skills (see below)
- initiative and the ability to work partly autonomously
- experience in at least one programming language and willingness to learn Python
- experience in at least one of the field methods eddy-covariance flux measurements, chamber flux measurements, meteorological measurements or canopy and soil characterisation with optical and lab methods, and willingness to learn several more of these methods
- experience in at least one of the data methods satellite remote sensing, GIS cartography, or ecosystem modelling and willingness to learn more about them
- basic background in statistics and willingness to learn more about it

- Working Place:** Forschungszentrum Jülich, Germany (near Cologne)
- Earliest Start:** September 2021
- Language Requirement:** Very good knowledge of English language, written and spoken. German language courses are organised in the context of our in-house training program and are free of charge.
- Name and Address of the Supervisor:** Dr. Alexander Graf, Prof. Dr. Nicolas Brüggemann, Forschungszentrum Jülich, Institute for Bio- and Geosciences (IBG-3), 52425 Jülich, Germany; Email: [a.graf@fz-juelich.de](mailto:a.graf@fz-juelich.de)