



URPP Global Change Biodiversity

The University of Zurich Research Priority Programme (URPP) on Global Change and Biodiversity (GCB) is an established interdisciplinary research program (<http://www.gcb.uzh.ch>). Biodiversity is both a response variable affected by global change drivers (land use change, climate change, invasions, exploitation, and pollution) and a factor modifying ecosystem processes and services that are essential to human well-being. An improved capability to predict the consequences of changes in drivers will aid improved prediction of the state of the environment. The URPP GCB implements innovative avenues in this research domain by using a latitudinal gradient approach based on interactions, feedback and scale, to provide a more reliable and robust knowledge of global change processes.

We are looking for highly motivated, enthusiastic and independent applicants with a passion for science to join our research program. A high standard of written and spoken English is required. We offer outstanding working conditions, a high quality of life in Zurich, and an excellent support environment. The position start is as soon as a suitable candidate is found. Salaries correspond to the university regulations of PhD salaries. We invite applications for the following PhD position:

Ref URPP-GCB-MS-17-01: Earth System Science / Biogeochemistry

We are looking for a motivated candidate, capable of biogeochemical analysis of leaf pigments with liquid chromatography, and measuring spectral traits of leaf and canopy using spectrometers, and relating both parameters mathematically. We therefore invite applications for a PhD position in Earth System Science / Biogeochemistry on biogeochemical validation of remotely sensed plant traits.

The aim of the project is to develop a novel approach, which will allow us to use remotely sensed spectral information to infer leaf traits on a watershed scale. Relationships between chemical composition of leaf pigments and remotely sensed spectral traits are based on classical data from more than two decades ago. Technologies have progressed, resolution of biogeochemical analytics has increased, remote sensing detectors have improved, but these classical data and relationships have not yet been updated. In the proposed project, we plan to first, measure the spectral data (e.g., hemispherical, conical) of leaf and canopy traits in the field, second describe and identify individual leaf pigments using liquid chromatography coupled to light detectors, and then establish relationships between the two based on their absorption spectra.

The successful applicant will be based in Zurich and embedded in a supervisory team including Michael Schmidt, Guido Wiesenberg and Michael Schaeppman. You will work in the Department of Geography, which hosts several research groups working on a variety of topics assessing the key drivers of global change and biodiversity (www.geo.uzh.ch).

Responsibilities include supervision of students, presentations of results at conferences and publication in international refereed journals.

Requirements include a MSc-degree in soil biogeochemistry or a related discipline, such as physical geography, geoecology, environmental sciences, food chemistry, and work experience in analytical methods. Good knowledge of English as working language is essential. A driving license is beneficial. Start upon mutual agreement. More information on our research group can be found at www.geo.uzh.ch/phys. For further details contact Prof. Dr. Michael W. I. Schmidt (michael.schmidt@geo.uzh.ch). Send a letter of application, CV, a statement of your motivation and your research interests and addresses of two potential referees (e.g. former advisers) to him as single pdf-file. Evaluation will start in May 2017 and will continue until positions are filled.