



Leibniz-Institute of  
Freshwater Ecology and Inland Fisheries

The Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB) ([www.igb-berlin.de](http://www.igb-berlin.de)) is the largest freshwater research institute in Germany with a mission for the generation, dissemination and application of knowledge about freshwater ecosystems. The IGB program is unique in that it combines basic and applied research for the benefit of both. Cooperating intensively with the scientific community (universities, research institutes), government agencies, as well as the private sector, guarantees the development of innovative solutions to the most pressing challenges facing freshwater ecosystems and human societies. The IGB is part of the Forschungsverbund Berlin e.V. (FVB). Within the framework of a legal entity the FVB represents eight research institutes operating in the fields of natural, life, and environmental sciences which pursue common interests while maintaining scientific autonomy. IGB is linked through joint professorship to three universities in Berlin.

The Department of Ecohydrology at the IGB offers a:

## PhD thesis “Fluvial meta-ecosystem modeling”

Fluvial ecosystems are an important element in the global carbon cycle metabolizing large amounts of terrigenous organic matter (tOM). This contributes to CO<sub>2</sub> evasion fluxes that are under continuous reevaluation at the global scale. In contrast, research on the underlying processes is concentrated at the local ecosystem scale. This scale-gap seriously hampers process understanding across scales, limits upscaling accuracy, and reduces our scope of reaction strategies. The **ERC Starting Grant Project FLUFLUX** (“Fluvial Meta-Ecosystem Functioning: Unravelling Regional Ecological Controls Behind Fluvial Carbon Fluxes”) aims to develop a deeper mechanistic understanding of fluvial carbon fluxes by investigating ecological processes at the intermediate ‘regional’ scale of the ‘fluvial network’. In particular, respiration of tOM is hypothesized to be an interactive product of organismic diversity and resource diversity, which both follow conspicuous patterns in river networks. From an ecological perspective, river networks may be aptly termed ‘fluvial meta-ecosystems’.

The aim of the open position is to develop a spatially explicit and dynamic meta-ecosystem model that is capable to reproduce natural patterns of biodiversity and resource diversity in river networks. The model shall serve two main purposes: (i) exploration of topological effects and impacts of anthropogenic interference through “in-silico” exploration of artificial river networks, (ii) generation of predictions (of biodiversity, resource diversity and functioning) for real river networks under imminent fragmentation threat. The model should be validated with lab- and field-based data generated within the project by other team members.

We search for either a highly motivated PhD candidate holding a Masters degree in relevant disciplines (Ecology, Limnology, Environmental Sciences, Ecohydrology) with experience/motivation in stream/river ecosystem ecology, biodiversity or biogeochemistry. Experience in ecological/environmental modeling is a definite requirement. Excellent English is mandatory. We offer a 3-year position in a small international team starting anytime October 2017-February 2018. Salary will be according to TVöD (60%). The position will be filled upon identification of a suitable candidate. Final application deadline is **December 31 2017**.

For more information contact:

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