

The working group for Plant Ecology at the University of Tübingen is looking for a

## **PhD candidate in Vegetation Modeling**

We are looking for an ecologist with excellent theoretical knowledge in the field of plant ecology, with a focus on landscape ecology, population ecology, or community ecology. The candidate should hold an M.Sc., Diploma or similar degree in biology, geosciences, environmental sciences or a related subject. He/she should have a strong conceptual approach to ecological questions and a profound knowledge of ecological theory, especially with respect to plant functional types. In addition, modeling skills are highly desirable.

The project is part of a new DFG Graduate School entitled Integrated Hydrosystem Modeling (see document below, **Position D3**) that has been newly established at the University of Tübingen, in collaboration with the University of Waterloo, Canada. The programme aims at promoting interdisciplinary studies, and this particular project aims at integrating between hydrological and ecological modeling. The main idea is to improve hydrological models by explicitly addressing the dynamic aspect of vegetation as a function of hydrological processes and *vice-versa*. Therefore, an interdisciplinary background would be helpful. The candidate would be able to make use of a new approach to vegetation modeling that has been developed at our working group.

Enquiries about this particular position can be addressed to Katja Tielbörger (katja.tielboerger@uni-tuebingen.de). For application procedures, other positions within the same programme and further information please refer to the following pages.



## International Research Training Group (IRTG) Integrated Hydrosystem Modeling

The International Research Training Group (IRTG) “Integrated Hydrosystem Modeling” at the Universities of Tübingen (Germany), Hohenheim (Germany), and Waterloo (Canada) targets at developing and applying numerical models of flow and reactive solute transport in coupled hydrosystems comprising of land-surface and subsurface compartments. These models are needed to assess the impacts of environmental change on water quantity and quality at catchment scale. The IRTG offers a structured PhD program at the German partner universities with joint international training and supervision. The main work place is in Tübingen; a six-month research stay at Waterloo is integral part of the training. The program starts on **June 1, 2012**.

We seek for **10 Doctoral Researchers** (3 years, 75% TV-L E13 according to German public salary system) for one of the following topics, ordered by research themes:

### **Theme A: Flux Balances at the Land Surface**

- A.1 Water Transport through Plants
- A.2 Groundwater Recharge under Climate and Land-Use Change
- A.3 Soil Uptake and Emissions of Atmospheric Pollutants

### **Theme B: Biogeochemical Reactions in Catchments**

- B.1 Validity of Travel-Time Based Reactive Transport Models
- B.2 Slow Microbial Transformations in Oligotrophic Aquifers
- B.3 Compound-Specific Isotope Fractionation at Catchment Scale

### **Theme C: Uncertainty Assessment of Large-Scale Models**

- C.1 Prioritising Uncertainty Sources in Coupled Hydrosystem Models
- C.2 Optimal Design of Monitoring in Coupled Hydrosystems
- C.3 Assimilation of Land-Surface Observations in Coupled Hydrological Models

### **Theme D: Evolution of Catchments**

- D.1 Physics-Based Modelling of Erosion at Catchment Scale
- D.2 Chemical Weathering at Catchment Scale
- D.3 Modelling of Vegetation Dynamics Coupled to Physics-Based Hydrology

We also seek for **1 Postdoctoral Researcher** (2 years, 100% TV-L E14) following his/her own research agenda in at least one of the four research themes and contributing to the integration of the IRTG. Candidates for the postdoctoral position are requested to submit a research plan.

More information on the IRTG can be found at  
<http://www.hydromod.uni-tuebingen.de>

Applicants for the PhD positions must hold a MSc or equivalent degree in quantitative geosciences, civil and environmental engineering, physics, applied mathematics, ecology or another field of science and engineering with appropriate specialization. They should have a demonstrated interest in the field of hydrosystem modeling.

The postdoc must have finished his/her PhD in the research field of the IRTG, show a good publication record, and should have gained specialized knowledge in process analysis or hydrosystem modeling. We expect an independent, documented research agenda fitting into the topics of the IRTG, willingness to train and collaborate with doctoral candidates, and very good communication skills. Experience in an international research context is preferred.

Applications are to be submitted until **February 19, 2012** to the University of Tübingen, Department of Geosciences, c/o Monika Jekelius, Hölderlinstr. 12, 72074 Tübingen, Germany or by email to **monika.jekelius@uni-tuebingen.de**. Applications should include a letter of motivation, a CV, transcripts or degree certificates including grades, proof of special qualifications, prints of publications if applicable, and a list of at least three referees. Applications to the PhD positions should indicate the preferred topic, applications to the postdoc position need to include a research plan.

The participating universities want to increase the number of female researchers, particularly in the field of modeling, and specifically encourage female candidates to apply. Special gender-equality measures will be emplaced within the IRTG.

Disabled persons will be preferred in case of equal qualification.