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, 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 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.