University of Hamburg
Postdoc Position Vacancy

The University of Hamburg jointly with the Max Planck Institute for Meteorology and the Institute for Coastal Research at the GKSS Research Centre is establishing a trans-disciplinary research focus on “Integrated Climate System Analysis and Prediction (CliSAP)”. The goal is to analyze ongoing and past changes of the state of the climate system, in response to natural and human-driven perturbations, to determine predictable elements of the climate system over a broad range of space and time scales, and to determine uncertainties intrinsic to predictions of important climate system and environmental indices (see www.clisap.de).

The Cluster of Excellence (CliSAP) invites applicants for a postdoctoral research associate position within the junior research group

‘Regional Hydrology in Terrestrial Systems’

The junior research group led by Jun.-Prof. Dr. Lars Kutzbach studies the coupled water and carbon dynamics of terrestrial systems with a focus on wetlands. We aim to improve the understanding of soil and vegetation processes and their coupling to the atmosphere and the hydrosphere. For this purpose, we will combine intensive measurement campaigns in wetlands of different climate zones with hydrological and ecological modelling. We will investigate the vertical land-atmosphere exchange fluxes of energy, water and carbon as well as the lateral exchange fluxes of water and carbon between wetlands and the surrounding terrestrial and aquatic systems. In cooperation with the modelling working groups within CliSAP, we aim to develop robust approaches for up-scaling measured properties and fluxes as well as process parameterisation from the landscape scale to regional or global scales. The postdoctoral research associate will focus his work on one major research project of our group:

‘Hydrological controls on the carbon dynamics of boreal peatlands – Investigated at the Ust-Pojeg mire complex, Komi Republic, NW-Russia’

Peatlands, which are mainly located in the northern high-latitudes, are globally important storages of freshwater and carbon. Will these sensitive ecosystems maintain their important functions as carbon sinks and water regulators under the on-going climate and land use change? To evaluate this question, we want to start an interdisciplinary cooperation project on the coupled water and carbon dynamics of boreal peatlands. We want to (1.) analyse the spatial and temporal dynamics of all water balance components of a typical boreal mire of Northwest-Russia, (2.) quantify the input, throughput and output of dissolved organic carbon (DOC) and dissolved inorganic carbon (DIC) of the mire, (3.) characterise the biogeochemical composition of DOC and DIC in inflow, peat pore and outflow waters and thus gain new insights into the processes that control the generation, transport and transformation of DOC and DIC in boreal peatlands, (4.) quantify the complete carbon balance of the investigated peatland by combining the results of the lateral carbon fluxes with measurements with the vertical land-atmosphere CO_2 and CH_4 fluxes determined by the eddy covariance approach, and (5.) compare the hydrological and biogeochemical measurement data with output from several regional hydrological models of different resolution and a wetland module of a dynamical earth system model, taking into account their different spatial scales.

For this project the university has a position open for a

post-doc research associate
(wissenschaftliche/r Mitarbeiter/in in einem post-doc-Arbeitsverhältnis)

- salary group 14 TV-L with a starting date as soon as possible.

The position calls for 39 hours per week. The fixed-term contract will end on 31 october 2012; see also § 2 of the Academic Fixed-Term Contract Law (Wissenschaftszeitvertrags-gesetz).

The university intends to increase the number of women amongst its academic personnel and expressly encourages qualified women to apply. In compliance with the Hamburg Equal Opportunity Law, preference will be given to qualified female applicants.

Responsibilities:
The post-doc candidate will focus his/her work on field measurements and modelling of the spatial and temporal dynamics of all water balance components of a typical boreal mire of Northwest-Russia (Topic 1 of the project described above) and the comparison of the landscape-scale hydrological measurement and model results with output from several regional hydrological models of different resolution and a wetland module of a dynamical earth system model (Topic 5). He/She will participate in the planning of extensive field campaigns to a remote area in the Komi Republic in Russia. Field work at the investigated peatland site in Russia of about 2-3 months per year will be expected. The candidate will be responsible for the establishment and maintenance of hydrological and micrometeorological field instrumentation at the investigation site, including piezometers, automatic discharge and water level recorders, standard-meteorological sensors and an eddy covariance flux measurement system. He/She will conduct the necessary quality-control of the data, the statistical analyses and the interpretation of the data and is expected to publish the results in international peer-reviewed journals.
The work of the postdoctoral research associate will be closely integrated in the research activities of the junior research group “Regional Hydrology of Terrestrial Systems”. Participation in other research projects of the group (e.g., peatlands in Northern Germany, the arctic Lena-River Delta or the high Andes) will be possible. The candidate will be encouraged to establish independent teaching in the field of hydrology (1-2 semester hours). Supervision of Ph.D. and M.Sc. students will be expected.

Requirements:
- Academic degree plus doctoral degree in an academic subject area qualifying the holder to carry out the above-mentioned responsibilities, e.g. Hydrology, Meteorology, Geosciences;
- Competence and high motivation for independent research;
- Comprehensive experience with spatially explicit hydrological modelling on the catchment area scale;
- Profound knowledge of hydrological and hydrometeorological theory;
- Profound knowledge of statistical and deterministic hydrological modelling approaches on different scales;
- Experience with hydrological field instrumentation and data recording;
- Strong mathematical and statistical background;
- Experience with computer programming;
- Excellent team-player and high motivation for interdisciplinary work in an international environment including extensive field work in a remote area of Russia;
- Publication record;

- Experience in supervising students;
- Very good English skills;
- Language skills in Russian a plus;
- Experience with micrometeorological methodology, especially the eddy covariance approach, a strong plus.

Application dossiers (application letter, curriculum vitae, degree certificate(s), etc.) are to be submitted to:

Universität Hamburg
KlimaCampus
CliSAP Office
Reference number 1956 Postdoc
Grindelberg 5
20144 Hamburg

or to

office.clisap@zmaw.de

The deadline for receipt of applications is 15th June 2009. For additional information please contact Jun.-Prof. Dr. Lars Kutzbach (lars.kutzbach@zmaw.de).

Preference will be given to disabled applicants with equal qualifications.