As a member of the Helmholtz Association, Forschungszentrum Jülich makes an effective contribution to solving major challenges facing society in the fields of information, energy, and bioeconomy. It focuses on varied tasks in the area of research management and utilizes large, often unique, scientific infrastructure. Come and work with around 6,100 colleagues across a range of topics and disciplines at one of Europe’s largest research centres.

The job will be advertised until the position has been successfully filled. You should therefore submit your application as soon as possible. We look forward to receiving your application via our Online-Recruitment-System!

Questions about the vacancy?
Contact us by mentioning the reference number 2020-068: career@fz-juelich.de
Please note that for technical reasons we cannot accept applications via email.

The Institute of Bio- and Geosciences – Agrosphere (IBG-3) conducts research to improve our understanding of biogeochemical and hydrological processes in terrestrial systems. A combination of experiments, modelling and innovative observation technologies is used to bridge the gap between model, process and management scale. Its research contributes to the sustainable and resource-conserving use of soils and water and to the quantification of the effect of climate and land use change on terrestrial ecosystems. In IBG-3’s department Integrated Modelling of Terrestrial Systems, we perform research on terrestrial systems and the water cycle using integrated modelling systems and advanced supercomputing technologies in close collaboration with the Jülich Supercomputing Centre (JSC) where the Simulation Laboratory Terrestrial Systems provides specific support and conducts model development for IBG-3 and its partners in the Geoverbund ABC/J.

We are looking to recruit a

2020-068 - Postdoc on integrated high-resolution Earth system modelling

Your Job:
As Germany is phasing out of coal-fired power generation by 2038, large socio-economic transition processes are taking place especially in the coal mining regions. Part of the complex and ambitious phase-out plan for the Rhenish (Rhineland) lignite-mining area is to establish a bio-economy region ("BioökonomieREVIER"), characterized by an innovative sustainable circular economy. For this, a number of interdisciplinary Innovation Labs ("BioökonomieREVIER_INNO") have been established. For the Innovation Lab “Digitales Geosystem Rheinisches Revier” (DG-RR), Digital Geosystem Rhineland Region, we have an open position. In DG-RR we will (i) set up and operate a data information system, that will provide baseline data for the other Innovation Labs, (ii) develop new applicable and reusable data products and (iii) explore the potential of novel sensor systems. In this context the postdoc will setup and operate a very high resolution, sub-km resolution regional hydrometeorologic model.

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The successful candidate is expected to work on the following tasks, in close collaboration with project partners who work on big-data workflows and dissemination:

- Based on existing experiments and model implementations, you will set up near real-time, (fully coupled,) very high-resolution forecasts and climate change simulations on water cycle processes, land-atmosphere coupling, and groundwater hydrodynamics, using the Terrestrial Systems Modelling Platform (TSMP, https://www.terrsysmp.org) or its component models (e.g. https://www.parflow.org);
- You will run numerical models on JSC HPC systems including advanced data analysis, towards the development of specific, new data products for stakeholders in the bio-economy realm and scientific publications.

Your Profile:

- University degree (Master with subsequent PhD) in either meteorology, hydrology, geosciences, physics, computer sciences, applied mathematics, or equivalent
- Proficiency to work on the command line under Linux is a must
- Proven experience in the setup and running atmospheric or hydrologic numerical model simulations
- Proven Python programming skills is a must; Fortran, or C/C++ knowledge is an advantage
- Ability to work independently in an international, interdisciplinary team across institutes is a must
- Good communication skills and very good command of the English language are a must

Of great advantage is furthermore:

- Knowledge in the areas of meteorology or hydrology
- Experience with high-performance scientific computing
- Experience with big datasets and scientific data formats (e.g., netCDF)
- Knowledge of professional software development including use of version control tools
- Parallel programming experience

Our Offer:

- Excellent infrastructure of one of the largest research centres in Europe
- Competent, interdisciplinary and international working environment, as well as an excellent framework in the areas of environmental science experiments and modelling
- Attendance at national and international conferences and workshops
- Vibrant international work environment on an attractive research campus, ideally situated between the cities of Cologne, Düsseldorf, and Aachen
- Flexible working hours and various opportunities to reconcile work and private life
- Limited for 2 years with possible longer-term prospects
- Full-time position with the option of slightly reduced working hours
- Salary and social benefits in conformity with the provisions of the Collective Agreement for the Civil Service (TVöD)

Forschungszentrum Jülich promotes equal opportunities and diversity in its employment relations.

We also welcome applications from disabled persons.