We are offering at the earliest possible date a

**PhD position – Land surface modelling for analysing impact of future extreme events on ecosystems**

**Your Job:**
As a PhD at the IBG-3 you contribute to the Helmholtz funded project SCENIC (Storyline Scenarios of Extreme Weather, Climate, and Environmental Events along with their Impacts in a Warmer World). SCENIC carries the storyline approach from global to regional and local scales, and from climate to impact models, with a focus on Europe. This Innovation Pool project is an important contribution to the new Helmholtz research program “Changing Earth - Sustaining our Future”.

In this position, you will use the land surface and subsurface components of an existing TSMP (Terrestrial Systems Modelling Platform) model over Europe. You will perform simulations for past, present and future climate conditions with a focus on the impact of extreme events on ecosystems and water resources. Project partners (climate modellers) will provide the atmospheric conditions related to the extreme events. You will...
evaluate the model performance for past extreme events (heat waves, drought) by making evaluations with different types of measurement data including remote sensing products. For future projections, a possible task is the implementation of model improvements, depending on the outcome of the evaluation with past data. In addition, you will achieve a more detailed simulation of the ecosystem response to extreme events by the use of the FATES model in combination with TSMP. Your work and work of project partners will create improved insights in the (impact of) future extreme events with possible consequences for climate mitigation and adaptation.

Your main tasks will include:

• Perform simulations with an existing terrestrial systems model for Europe, both for periods in the past and present, as well as the future (climate scenarios)
• Make a detailed statistical analysis of simulation results including comparison with in situ and remotely sensed measurements (for past events) and a focus on the impact of extreme weather events like droughts on vegetation (crops and forests) and water resources.
• Change and enhance the simulation model to improve the accuracy of future model projections
• Maintain contact and cooperate with project partners
• Publish results in international peer reviewed journals
• Participate in project meetings, and national and international conferences

Your Profile:

• MSc in hydrology, ecology or related field (e.g. atmospheric sciences, soil science, simulation sciences)
• Experience in terrestrial system modelling (e.g., land surface, ecology, hydrology, groundwater)
• Interested to work with large data sets
• Programming skills (e.g., Python, Fortran, R, C++) are of advantage
• Experience with Linux-based systems and high performance computing is of advantage
• Ability to work independently as well as collaboratively in an interdisciplinary team
• Very good communication and organizational skills
• Very good command of English language

Our Offer:
We work on the very latest issues that impact our society and are offering you the chance to actively help in shaping the change! We offer ideal conditions for you to complete your doctoral degree:

• Participation in national and international conferences and workshops
• Development of own scientific profile
• Cooperation in a highly motivated and interdisciplinary team
• Extensive internal and external training opportunities
• Exciting working environment on an attractive research campus, conveniently located in the Cologne-Düsseldorf-Aachen triangle of cities
• Further development of your personal strengths, e.g. through an extensive range of training courses; a structured program of continuing education and networking opportunities specifically for doctoral researchers via JuDocS, the Jülich Center for Doctoral Researchers and Supervisors: https://www.fz-juelich.de/judocs
• Targeted services for international employees, e.g. through our International Advisory Service

The employment of doctoral researchers at Jülich is governed by a doctoral contract,
which usually has a fixed term of three years. Pay in line with 65% of pay group 13 of the Collective Agreement for the Public Service (TVöD-Bund) and additionally 60% of a monthly salary as special payment („Christmas bonus”).

Further information on doctoral degrees at Forschungszentrum Jülich including our other locations is available at: www.fz-juelich.de/gp/Careers_Docs

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

We also welcome applications from disabled persons.