Are you a software engineer who wants to work with Earth System Model data or an atmospheric scientist with outstanding skills in software development? Would you like to work on the forefront of developing the necessary data infrastructures for the next-generation climate models? Then we might have an attractive job offer for you.

In the context of the German "Warmworld" project, https://warmworld.de/ , module "Easier", our research group Earth System Data Exploration and our Lab on Federation Technologies and Services are jointly developing a federated data infrastructure with optimized performance for very large model output. At the Jülich Supercomputing Centre (JSC), we operate one of the most powerful supercomputer infrastructures for scientific and engineering applications in Europe and we are teaming up with ECMWF and DKRZ to develop these into a hub for Earth System Model data.

We are looking to recruit a

**Research Software Engineer – Earth System Model Data**

**Your Job:**
In this position, you will work in a diverse team of highly motivated scientists and software engineers to develop cutting-edge solutions for storage and delivery of massive Earth System Model output data. We want to develop a federated system that allows users to access Earth System Model output across sites and that can be interfaced with an API for efficient and flexible data extraction (for example within given polygons or as point time series). Our system will build on the field data base (FDB) by ECMWF that is behind the Copernicus Data Store and it shall be installed on the Jülich HPC systems. Your tasks will include:

- Preparation of Earth System Model data and development of workflows to ingest model output in the FDB instance at JSC
- Performance analysis of data ingestion and data retrievals and optimization of storage layout, data structures, and workflows to maximize data access performance
- Parallelization of data workflows

We look forward to receiving your application until 17.09.2023 via our [Online-Recruitment-System](https://warmworld.de/). If you have any questions about the vacancy, get in touch with us by using our contact form.

Please note that for technical reasons we cannot accept applications via email.

[www.fz-juelich.de](http://www.fz-juelich.de)
• Investigation of cutting-edge technologies for data compression, including AI methods
• Development of highly performant APIs to facilitate integration of Earth System Model data into end user workflows and services
• Collaboration with Warmworld partners to establish a federation of Earth System Model data
• Documentation of your developments, including opportunities to present your work in scientific publications and at scientific conferences

Your Profile:
• Excellent Master degree in Computer Science or Meteorology/Atmospheric Physics or a similar field of studies
• Very strong programming skills, especially in C++ and Python
• Experience with software development in collaborative projects, including proficient use of git/Gitlab or other version control systems
• Familiarity with software deployment (e.g. cmake)
• Experience with parallel programming and HPC systems
• Experience with large-scale data handling (O(>100 TBytes))
• Knowledge of data formats, structures, and metadata standards that are common in Earth System Models
• Your experience should be documented in Open Source code projects
• Self-motivated personality, curiosity of working in a multi-disciplinary and diverse team environment on scientifically and technically challenging problems
• Very good command of written and spoken English

Our Offer:
We work on the very latest issues that impact our society and are offering you the opportunity to actively help in shaping change. Here is what Forschungszentrum Jülich can offer you:
• Work on frontiers of scientific and technological challenges with access to cutting-edge and unique supercomputing systems including the upcoming first Exascale computer in Europe
• Developing the potential of our employees is important to us, which is why we offer individual professional development opportunities
• We support you right from the beginning: We help new colleagues to find their feet at Jülich – e.g. through our Welcome Days and Welcome Guide https://www.fz-juelich.de/en/gp/welcome-to-forschungszentrum-julich
• Extensive occupational health management and a variety of sports activities (e.g. beach volleyball court, running groups, yoga classes, and much more)
• Ideal conditions for balancing work and private life, as well as a family-friendly corporate policy supported by our Equal Opportunities Bureau https://go.fzj.de/ReconcilingWorkandFamilyLife
• Flexible working hours in a full-time position (39 hours/week) with the option of slightly reduced working hours
• Flexible work arrangements, e.g. working from home
• 30 days of annual leave and provision for days off between public holidays and weekends (e.g. between Christmas and New Year)

In addition to exciting tasks and a collaborative working atmosphere at Jülich, we have a lot more to offer: https://go.fzj.de/benefits

You will be initially employed for a fixed term of 2 years but with the prospect of longer-term employment. Salary and social security benefits will conform to the
provisions of the Collective Agreement for the Public Service (TVöD-Bund), pay group 13 - 14, depending on your current qualifications and the precise nature of the tasks assigned to you.

We particularly welcome applications from people from a diverse range of backgrounds (e.g. regardless of age, gender, disabilities, sexual orientation/identity, as well as social, ethnic, and religious background). We strive to offer a diverse and inclusive working environment in which people enjoy equal opportunities and are able to fulfill their potential.