# We offer 3 positions for scientific programmers for the innovative large EU Big Data Streaming Project ACROSS

## A Team for ACROSS

**For All Positions/the Complete Team**
To your success, in all cases the following will contribute:

· Experience or a strong interest in high performance computing and data production, streaming and handling
· Experience with simulations on supercomputers
· Expertise in C / C++, UNIX / Linux, shell scripting, processing and visualization of simulation data
· Good communication and teamwork skills as well as the ability to work autonomously and self-responsible
· English is our working language, so proficiency is a pro

**What we offer**

· Participation in a challenging part of science in an international, intellectually stimulating environment established for the benefit of science and society, not of turnover increases
· Complex workflows on the bleeding edge of what is technologically possible
· Excellent opportunities for further (self-)training and development, self-organized or in external courses and events
· Very good opportunities for self-realization, freedom in and influence upon the decisions what to do, and how to do it
· A network of very experienced and innovative colleagues within the lab, the institute, and at project partner institutions with a long-proven tradition of sharing knowledge and information.
· Working for an open source community
· Payment will be in accordance with German public service positions depending on qualification (E 13 / E 14 TVöD), including extensive social security plans
· The conditions of employment, including upgrades and duration, follow the rules of the Max Planck Society for the Advancement of Sciences and those of the German civil service
· The Max Planck Society strives for gender and diversity equality

**Selection criteria**

Candidates will be evaluated based on their qualifications and ability to fulfill the responsibilities as outlined for this project.

**Deadline for applying**

The positions will be open until filled.

We are looking forward to receiving your application including the following documents:

1. A cover letter
2. A detailed curriculum vitae
3. The names, addresses, and telephone numbers of two referees

For further information, please contact Reinhard Budich (reinhard.budich(at)mpimet.mpg.de). Do not forward your application to this email address; the application needs to be submitted through the online application system (see link below). Please submit the application to our online application system via the link given in the specific advertisements for the positions, see there

## The Team Manager | The Software Stack Developer | The Workflow Implementor

### The Team Manager (f/m/x)
**(W089)**

The fixed-term position is limited to 36 months, the starting date will be from October 1, 2021.
*To successfully manage the team*, you will lead the design of the system of connectors and workflow specifics of the prototype applications, specify the resulting requirements for the software stack in detail, and set the appropriate goals and time lines for your team. As key contact person with regard to the ACROSS project you will also be responsible for the appropriate reporting and dissemination.
*Your mission:*
You will lead the way to streaming data from climate models to object-oriented databases, and further, to the analysis software, allowing seamless streaming access to both model and observation data for the scientific analysis. You will deliver a prototype software system applied in the ACROSS pilots, ready to be turned into production systems. You and your team will implement and test the software systems in the pilots and provide a repository of FOSS components to be used by the science community.
*The following aditional qualifications will contribute to your success:*

- A PhD in Informatics, Mathematics, Physics, Geosciences, or a related field would be advantageous
- Experience with agile methods
- Ability to cope with time pressure
- Proven team building and leading skills are desirable

*What we offer:*

- Responsibility as a team lead for a small team to enhance your leadership and management skills
- Opportunity to collect experience in working within EU-funded projects

Please submit your application to our online application system:
https://s-lotus.gwdg.de/mpg/mhmt/perso/mpim_**w089**.nsf/application

### Software Stack Developer (f/m/x)
**(W090)**

The fixed-term position is limited to 36 months, the starting date will be from October 1, 2021.
*Your Mission:*
Apply your excellent programming skills in optimizing data-intense software and its connectors for climate model applications on high performance computers. I/O- and post-processing servers and online specialized databases will be connected by streaming methods. Your goal is to develop, optimize, and deploy these key components.
*The following qualifications will contribute to your success:*

- A PhD in Informatics, Mathematics, Physics, Geosciences, or a related field would be advantageous
- Visualization experience
- In-depth knowledge and experience in developing C / C++ applications

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### Workflow Implementer (f/m/x)
**(W088).**

The fixed-term position is limited to 30 months, the starting date will be from October 1, 2021.
*You like to make programs work?* Especially data distribution pipelines which really work, from the model to the data user? Apply your excellent skills to workflows using prototype software systems operating in the context of climate modeling for hydrology and agriculture. In this small team of scientific programmers, as part of the SCLab, you will contribute to increasing the quality, applicability, and practicability of information drawn from climate modeling. Testing and quality assurance will be inherent in your work.
*Your mission:*
You will contribute to the development of the HPDA system for ICON and develop interfaces to existing workflows and the necessary test harness. You will share your applications with the pilots planned in ACROSS. A primary component will be the interface between the ICON data production system and the ECMWF distributed object storage system under development. You will also contribute to the basic model environment and workflow support in the lab by enhancing the current ICON modeling system with the new developments within ACROSS.
The following qualifications will contribute to your success:

- At least a master's degree in Geosciences, Oceanography, Environmental Sciences, Physics, or in a related field is necessary
- Experience or a strong interest in Earth System Models and skills in executing models are of advantage
- Experience with the MPI-M-models would be a pro
- Basic or advanced knowledge of Fortran, besides C/C++, is a plus as well as visualization skills

Please submit your application to our online application system:
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## The Institute
## Its Scientific Computing Lab
## The Project ACROSS

The **Max Planck Institute for Meteorology** (MPI-M)

is a multidisciplinary center for climate and Earth system research located in Hamburg, Germany. It is one of the premier climate science research institutes in the world. Located in the heart of one of Europe's most livable and vibrant cities, it provides a highly international and interdisciplinary environment for conducting scientific research as well as access to state-of-the-art scientific facilities.
For more information, please visit the institutes web page.

The **Scientific Computing Laboratory SCLab is** an integral part of the institute. This group provides consulting and services in the area of scientific computing. The main working tools in the group are the supercomputing systems at the German Climate Computing Center (DKRZ) and other European high-performance computing centers, where the MPI-M Climate Modelling System ICON and its computing environment including its High-Performance Data Analysis (HPDA) components are developed, applied, and maintained. These are the most modern computing architectures, for which off-the-shelf solutions are hardly available, wherefore creativity and innovation skills are necessary requirements. By working for us, you will contribute to increasing the quality, applicability, and practicability of information drawn from climate modeling.
For more info on the lab, see here.

Understanding climate and its change is one of mankind's most important challenges. The advent of exascale-computing in the near future gives new exciting insights from storm-resolving climate modeling on the global scale. The pace at which data are generated by such scientific experiments and large simulations poses new challenges in terms of the capability of efficiently and effectively analyzing the massive datasets generated. To improve the knowledge retrieval process from such analysis poses many demanding tasks for all its components.
The EU Euro-HPC project **ACROSS** (GA 955648) offers unique opportunities for the MPI-M to address these challenges. To support and develop this Big Data streaming project, we are looking to recruit the 3 scientific programmers.