

# NHR@KIT Call for Collaboration



## Objective

Steinbuch Centre for Computing (SCC) at Karlsruhe Institute of Technology (KIT) has recently become a center in the National High-Performance Computing (NHR) alliance. The goals of the NHR Alliance are:

- The nationwide and needs-based provision of high-performance computing capacities for scientific research at universities,
- The promotion of transregional and interdisciplinary collaborations and cooperation in a joint coordinated structure that is open for use throughout Germany,
- To strengthen the methodological competence of users, to promote young scientists, and to provide initial and continuing training in scientific computing,
- The promotion and further development of scientific computing.

The 10-year funding period (2021-2030) for NHR@KIT will enable scientists to use several generations of high-performance computers at KIT. HoreKa, one of the most powerful supercomputers in Europe, is available nation-wide since June 2021. NHR@KIT specifically addresses four user communities: earth system science, materials science, engineering for energy and mobility research, as well as particle and astroparticle physics.

The Simulation and Data Life Cycle Labs (SDLs)<sup>1</sup> at SCC provide dedicated high-level support that is tailored to these user communities. Each SDL is an integral part of its domain and strengthens its community by directly working with its partners to assist them in conducting simulations on supercomputers and in data analytics, management, and integration.

On the HPC methods side, NHR@KIT focuses on data-intensive computing, especially the combination of AI/ML techniques with simulations; specific expertise exists in GPU usage. Furthermore, NHR@KIT will promote Research Software Engineering (RSE) and will support the sustainable development of open-source software. A dedicated team for Software Sustainability and Performance Engineering (SSPE)<sup>2</sup> brings the existing HPC methods competence to the users.

NHR@KIT accepts proposals for collaborative research projects (i.e. Bridge Doctoral Researchers or Bridge Postdoctoral Researchers) within the SDLs and the SSPE team. In an **SDL**, the projects focus on the **nationwide demands in each scientific field**. Within the **SSPE team**, the PhD and postdoc projects **revolve around library, tool and software development**. The projects are expected to cover a research topic with a strong connection to HPC, and to the

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<sup>1</sup> <https://www.scc.kit.edu/en/research/sdl.php>

<sup>2</sup> <https://www.scc.kit.edu/en/research/sspe.php>

competences at NHR@KIT specifically. Each position will be funded as a 2/3 E13 position for 3 years. The funded person will be based either at SCC or any other institute at KIT. It is expected that the Bridge Doctoral Researcher or Bridge Postdoctoral Researcher will spend on average one day per week either supporting NHR courses or providing direct user support.

## Funding

For a period of 36 months, non-repayable grants up to maximum eligible costs equivalent to 2/3 E13 remuneration or EUR 46,000 per project per year for personnel expenses can be awarded from NHR@KIT funds. Increases to the salary from the collaboration partners' funds are encouraged. Material and travel expenses cannot be covered from NHR@KIT funding, so it is expected that these expenses are covered by the applicants from their own funds. Depending on the number of successful applications in the current call and the amount of funds available thereafter, additional calls will be published in the future. NHR@KIT especially encourages proposals from researchers with a diverse background.

## Prerequisites

- Applications are required to come from tandems of researchers, at least one of whom is a member of the NHR@KIT Board of Directors<sup>3</sup>. Since NHR@KIT offers its resources nationwide, the only restriction for the other collaboration partners is that they are affiliated to a German university or other higher-education institution.
- The project work culminates in a doctoral thesis or postdoctoral work which is jointly supervised by the collaboration partners. Ideally, there exists an ongoing project on HoreKa which is related to the topic.
- Applicants should select whether they apply for a position within an SDL or the SSPE team. Applications should be coordinated with the corresponding SDL speaker<sup>4</sup> or the SSPE team leader<sup>5</sup>, respectively.

## Selection Criteria

Applications will be evaluated according to the following selection criteria, which are in line with the overall goals of the NHR funding:

- Coherence of the research program and scientific benefit of the cooperation
- Contribution to the goals of NHR@KIT and interdisciplinary impact and applicability
- Scientific profile of the participating scientists
- Adequacy of the requested funds (e.g. resource and time planning)
- Plans and actions to promote diversity and equal opportunities
- Coverage of the application fields and the method areas

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<sup>3</sup> <https://www.nhr.kit.edu/english/67.php>

<sup>4</sup> <https://www.nhr.kit.edu/english/115.php>

<sup>5</sup> <https://www.scc.kit.edu/en/staff/12332.php>

## Procedure

Applicants may apply for funding by submitting a proposal to [collaboration-call@nhr.kit.edu](mailto:collaboration-call@nhr.kit.edu) until December 12, 2021. Proposals need to cover the points outlined below and should include information about planned and granted HPC projects in the scope of the proposal, especially including projects on HoreKa, as well as contributions in the scope of the HPC environment. Proposals should not exceed 5 pages (Arial 10 pt). Usage of the provided template for the submission is encouraged<sup>6</sup>. The proposals will be reviewed externally based on the selection criteria mentioned above. The funding decision is expected for the end of January 2022.

## Contact

For further questions, please contact us via mail to [collaboration-call@nhr.kit.edu](mailto:collaboration-call@nhr.kit.edu).

## The proposal should be structured as followed

- Title of the project
- Short abstract (can be published for accepted projects)
- Tandem of researchers including CVs
- Applying for position within (choose one):
  - SDL Earth System Science
  - SDL Materials Science
  - SDL Engineering in Energy and Mobility
  - SDL Particle and Astroparticle Physics
  - SSPE team
- Coordinated with SDL Speaker or SSPE Team Leader
- Detailed description of the project idea
- Anticipated project schedule and milestones (tabularized)
- Short description of the project's contribution to the goals of NHR@KIT
- Recognition of the terms and conditions of this call by finalizing the proposal with the following signed part:

I, the PI of the proposed project X hereby consent to and recognize the project terms and conditions of the NHR@KIT call for collaboration.

Name, Date, Signature

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<sup>6</sup> [https://www.nhr.kit.edu/collaboration-call/downloads/Call\\_for\\_Collaboration\\_NHRatKIT\\_Template.docx](https://www.nhr.kit.edu/collaboration-call/downloads/Call_for_Collaboration_NHRatKIT_Template.docx)