

Reproducibility as a service: collaborative scientific computing with Julia

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With the complexity of the involved algorithms and software packages, reproducibility of numerical simulations is often difficult to achieve. This makes it harder to collaborate on research projects, since there can be a considerable ramp-up time for new project members before they are able to contribute to a joint code base. Julia is a modern, dynamic programming language designed for high-performance scientific computing. It makes it easy to set up collaborative development workflows by providing tools to create fully reproducible environments for all major operating systems, which can then be easily shared in a small Git repository. In this talk, we will give a brief general introduction to Julia and its capabilities, focusing on those aspects that make it interesting for collaborative research software development. We will include real-world examples from our research code Trixi.jl, a Julia package for adaptive numerical simulations of fluid flow and other conservation laws.

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Sitzung Einordnung: Contributed Talks