

ADVANCES IN AUTOMATIC CODE-GENERATION SOFTWARE FOR SIMULATIONS IN SCIENCE AND ENGINEERING

TRACK NUMBER 5000 SCIENTIFIC COMPUTING

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ABSTRACT

With the advent of modern programming technologies, many open-source high-level softwares have emerged for automating the solution of PDE systems e.g. [1, 2, 3, 4, 5]. Such solutions usually simplify the formulation of the underlying physical problem from the user's point-of-view using domain specific languages, and automate their resolution through optimised code generation tools. Computational efficiency is also an important aspect of such solutions which generally rely on scalable linear algebra libraries and automated parallelism.

This minisymposium will aim at gathering users and developers of such software to exchange on recent developments on core functionalities, computational optimisation, current challenges or new applications on complex problems.

REFERENCES

- [1] Dune, <https://dune-project.org>
- [2] Feel++, <https://feelpp.org>
- [3] FEniCS Project, <https://fenicsproject.org>
- [4] Firedrake Project, <https://firedrakeproject.org>
- [5] GetFEM++, <https://getfem.org>