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OPEN-SOURCE SCIENTIFIC SOFTWARE AND THE APPLICATION TO REAL WORLD PROBLEMS

TRACK NUMBER 1200 - MODELING AND ANALYSIS OF REAL WORLD AND INDUSTRY APPLICATIONS

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ABSTRACT

Numerous open source software (OSS) packages have been developed and enhanced in recent years and the range of practical use has been significantly extended throughout academia and industry. The goal of this minisymposium is to confirm recent trends in scientific OSS (arising in multiple disciplines such as Engineering, GeoScience, Life Sciences, Materials Research, Climate/Weather Prediction) and discuss the directions for future development and their deployment for production applications in both scientific research and in an industrial context.

Topics of this minisymposium include, but are not limited to :

- Open source solvers, such as FEM, FVM, particle methods, molecular/quantum methods

- Pre-/post-processors

- Examples of real-world modelling and simulation with OSS (so focusing on the use of the software for a range of applications such as fluid analysis, structural analysis, electromagnetic analysis, etc.)

- Execution environments for supporting OSS users

- Maintenance or management of OSS

- Challenges in developing OSS for large-scale HPC systems