

Parallel-in-time methods : recent developments and applications

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Abstract

This minisymposium aims at discussing and sharing recent ideas on methods that use decomposition of the time domain to improve parallelization and/or scaling capabilities. This covers parallel-in-time algorithms, which have been the focus of many developments in the last two decades, but also novel discretization methods that exploit space-time concurrency. Those approaches have shown their potential of complementing space domain decomposition techniques, and this will be illustrated by applications of current solutions to various, eventually large scale, engineering problems. Also, it is well known that efficient time integration is still an important challenge for existing parallel-in-time solutions, as well as for their adaptation to the next generation supercomputing architecture. The minisymposium will give the opportunity to present investigations on the current bottlenecks of time-parallelization and the development of new or modified existing solutions toward more robust, accurate and efficient algorithms.

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