

CNASC Seminar

Speaker

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Time Parallelisation with MGRIT

Abstract:

Time-parallelisation techniques provide an additional method to speed up the numerical solution of evolving PDEs when spatial domain decomposition saturates, by seeking parallelisation along the direction of time. In particular, MGRIT is one of the most developed algorithms for parallel-in-time computations, and can be interpreted as a multigrid scheme with the coarsening procedure acting along the time domain.

While time-parallelisation has proven to be very successful when applied to parabolic equations, its effectiveness in applications involving hyperbolic PDEs is still a matter of research. In this talk, we provide an introduction to MGRIT, present some results from its application to a simple non-linear hyperbolic test case, and discuss directions for further improvements.