CNASC Seminar

Speaker

Mr. Oliver Krzysik,
Monash University, Australia

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Parallel Time Integration of Linear PDEs with Multigrid Methods

Abstract:
Parallel time integration of partial differential equations (PDEs) has become an increasingly important topic during the past several years. Many solution approaches have been developed, particularly for a range of diffusion-dominated problems. An example of one such algorithm is multigrid reduction-in-time (MGRIT). MGRIT is primarily a time-only coarsening algorithm, and thus is not directly suitable for explicit discretizations with stability restrictions, as are common in the case of hyperbolic PDEs, for example. One possible way around this limitation is to combine MGRIT with some type of spatial coarsening. In this talk, I will give an introduction to the MGRIT algorithm, and discuss some of our work on coupling MGRIT with spatial coarsening via reduction-based spatial multigrid.