

Parallel preconditioning for time-dependent problems with implicit time-stepping

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Much of the worlds parallel computational capability is taken up with massively parallel explicit time-step calculations of various physical phenomena. Such explicit computations are embarassingly parallel. There exist several sophisticated approaches to parallelization over time for implicit discretizations based variously on multiple shooting and multilevel technology.

In this talk we make a simple proposal for parallel computation (over time) of a simple evolutionary process with implicit time-stepping. Sparse matrices and linear algebra are key to our proposal.

This is joint work with Elle McDonald