## Applied and Computational Mathematics Seminar

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Friday, November 4, 2011 1:00p.m., HH-3017

Application of Domain Decomposition Methods to Mesh Generation and Space-Time Parallelism for PDEs

## Abstract:

Adaptively choosing an underlying spatial grid for computation has proven to be a useful, if not essential, tool for the solution of boundary value problems and partial differential equations. One way of generating adaptive meshes is through the so-called equidistribution principle (EP). Recently, the Revisionist Integral Deferred Correction (RIDC) approach has been shown to be a relatively easy way to add small scale parallelism (in time) to the solution of time dependent PDEs. In this talk I will show how large scale spatial parallelism can be added to both of these methodologies using relatively simple domain decomposition strategies. In the later case, this results in a truly parallel space-time method for PDEs.