Department of Mathematics,
University of California San Diego

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Center for Computational Mathematics Seminar

David Lenz
UCSD

Some Error Analysis of Spacetime Finite Element Methods

Abstract:

Standard methods for approximating the solution of time-dependent PDEs typically produce sequential time-stepping algorithms, which are not optimally efficient on today's highly-parallel supercomputers. Spacetime finite element methods have been developed over the last few years as an alternative approach which can harness the massive parallelism of modern computing platforms. In this talk, I will give an overview of what spacetime finite element methods are and how they differ from traditional methods. I will then discuss some a priori error estimates for these methods, as well as strides towards a posteriori error estimators which are reliable and efficient.

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11:00 AM
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