Computational Mathematics Seminar Series

The Enriched Galerkin (EG) Method for Local Conservation

Jiangguo Liu, Colorado State University

Johnston Hall 338
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Abstract:
In this talk, we present a locally mass-conservative finite element method based on enriching the approximation space of the continuous Galerkin (CG) method with elementwise constant functions. The proposed method has a smaller number of degrees of freedom than the discontinuous Galerkin (DG) method. Numerical results on coupled flow and transport problems in porous media are provided to illustrate the advantages of this method. Optimal error estimates of the EG method and comparison with related post-processing methods will be discussed also. This is a joint work with Shuyu Sun at Clemson University.

Speaker's Bio:
Jiangguo (James) Liu earned his Ph.D. in Mathematics in 2001 from University of South Carolina. He joined the Math Department at Colorado State University as an Assistant Professor after spending three and half years as a postdoc at Texas A&M University. His current research interests are numerical methods for partial differential equations and their applications in porous media flow and intracell protein trafficking.

Refreshments will be served.
This lecture has a reception.

Center for Computation & Technology
2003 Digital Media Center • Telephone: +1 225/578-5890 • Fax: +1 225/578-8957