

Multidisciplinary Simulation, Estimation, and Assimilation Systems Seminar Series

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*Hybridizable discontinuous Galerkin methods
for incompressible flows*

Abstract: In this talk, we present hybridizable discontinuous Galerkin methods for incompressible flows. These methods are devised by using the discontinuous Galerkin methodology to discretize the continuous problem with appropriate choices of the numerical fluxes and by applying a hybridization technique to the resulting discretization. Both semi-implicit and fully-implicit discretizations of the Navier-Stokes equations will be discussed. The HDG methods have three advantageous features over existing DG methods: (1) degrees of freedom reduction, (2) superconvergence property, and (3) local postprocessing for higher-order convergence.

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