

COLLOQUIUM

DEPARTMENT OF MATHEMATICS AND STATISTICS
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Space-time Discontinuous Galerkin Methods for Incompressible Flows on Moving Domains

Abstract

The Space-time Discontinuous Galerkin (ST-DG) method is an excellent method to discretize problems on deforming domains. This method uses DG to discretize both in the spatial and temporal directions, allowing for an arbitrarily high order approximation in space and time. Furthermore, this method automatically satisfies the geometric conservation law which is essential for accurate solutions on time-dependent domains. We present a higher-order accurate Hybridizable or Embedded Discontinuous Galerkin (DG-H or DG-E) method for incompressible flows. These discretizations are energy stable and guarantee a pointwise divergence-free velocity field on simplicial meshes. Numerical results will be presented to illustrate the method.

Tuesday, Oct 29, 2019
12:00 – 12:50 P.M.
372 Mathematics and Science Center (MSC)

(Refreshments at 11:30-12:00 PM in the kitchen area adjacent to 368 MSC)