







## Lothar-Collatz-Seminar

Wed, 27. Apr  $\cdot$  4:15 pm  $\cdot$  Geom H3

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## Adaptive discontinuous Galerkin methods for unsteady convection-diffusion problems on moving mesh

## Abstract:

In convection-dominated flows, large scale trends necesserally coexist with small-scale effects. While reducing the convection-dominance by moving the mesh, also called Arbitrary Lagrangian-Eulerian (ALE), already proved efficient, Adaptive Mesh Refinement (AMR) is able to catch the small scale effects. But, ALE introduces uncertainties that cannot be neglected in front of the small scale effects, therefore it is unsatisfying to use AMR the same way in an ALE situation as we do on static meshes.

I will first propose a Runge-Kutta Discontinuous Galerkin approximation on moving mesh of the unsteady convection diffusion equation and then I will compare two refinement criteria for a moving mesh Discontinuous Galerkin method, one is a classical remainder criterion and the other is adapted to this moving mesh situation.

For further information please contact

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