

THE HYBRIDIZABLE DISCONTINUOUS GALERKIN METHODS

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ABSTRACT

We introduce the hybridizable discontinuous Galerkin (HDG) methods in the framework of steady-state diffusion problems and show why they can be implemented more efficiently than any other DG method and why they are also more accurate.

We then give an overview of the application of these methods to several problems including wave propagation, linear and nonlinear elasticity, convection-diffusion and the incompressible and compressible Navier-Stokes equations.