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Jintao Cui* (jxcui1@ualr.edu), Department of Mathematics and Statistics, University of Arkansas at Little Rock, Little Rock, AR 72204, and **Wujun Zhang** (wujun@umd.edu), Department of Mathematics, University of Maryland at College Park, College Park, MD 20742. *An Analysis of HDG Methods for the Helmholtz Equation.*

In this talk we discuss the hybridizable discontinuous Galerkin (HDG) methods for the Helmholtz equation with first order absorbing boundary condition in two and three dimensions. We prove that the proposed HDG methods are stable (hence well-posed) without any mesh constraint. The stability constant is independent of the polynomial degree. By using a projection-based error analysis, we also derive the error estimates in L_2 norm for piecewise polynomial spaces with arbitrary degree. This is joint work with Wujun Zhang from University of Maryland. (Received July 17, 2012)