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**Xiaobing Feng, Michael Neilan and Stefan Schnake\*** (schnake@math.utk.edu). *Interior Penalty Discontinuous Galerkin Finite Element Methods for Linear Elliptic PDEs in Non-divergence Form*. Preliminary report.

This talk will focus on discontinuous Galerkin methods to approximate strong solutions for linear elliptic PDEs in non-divergence form whose coefficients are only continuous. These PDEs present themselves in the nonlinear Hamilton-Jacobi-Bellman equations, which have applications in stochastic optimal control and mathematical finance, as well as the linearization of the Mange-Amprere equations. We introduce a few interior penalty, discontinuous Galerkin, finite element methods which are simple in construction. The highlight of the talk will be to show the stability of these methods through a discrete Calderon-Zygmund estimate. Several numerical tests will be shown towards the end of the talk. (Received August 10, 2016)