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A cochain complex for interior penalty methods: error estimates and multigrid through differential relations.

In this talk, we discuss the differential relation between divergence-conforming discontinuous Galerkin methods for the Stokes system and continuous interior penalty schemes for the biharmonic problem. We show that this relation can be exploited to transfer results on multigrid methods and on error estimates between the two schemes. In numerical examples, we demonstrate the efficiency of the methods obtained through these relations.

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