Smooth Is Overrated: Generalizing Discontinuous Galerkin Methods for Numerical Relativity JONAH MILLER, University of Guelph, ERIK SCHNETTER, Perimeter Institute for Theoretical Physics — Discontinuous Galerkin Finite Element (DGFE) methods offer a mathematically beautiful and computationally efficient way to solve hyperbolic PDEs. This approach is well parallelizable and has been very successful in computational fluid dynamics and electrodynamics. Therefore, we are generalizing and adapting it to numerical relativity. In this talk, we briefly describe a generalized formulation of DGFE methods suitable for use with the BSSN formulation of Einstein's equations. We then discuss results of recent (3+1)-dimensional simulations using our formulation.

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