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**Discontinuous Galerkin Spectral Element Method with Hyper-Viscosity** BRADFORD DURANT, JASON HACKL, S. BALACHANDAR, University of Florida — Discontinuous Galerkin Spectral Element Method (DGSEM) is a high-order CFD method with that provides great performance in smooth flows. However, DGSEM requires extra work to stabilize discontinuities. We study the performance of DGSEM combined with the artificial viscosity scheme known as Hyperviscosity. Hyperviscosity is a gradient based artificial viscosity scheme for use in shock turbulence interactions. Originally created for a compact finite difference scheme, Hyperviscosity is adapted to the DGSEM framework. Due to the nature of adapting Hyperviscosity to DGSEM, the value of the tuning parameters of the artificial viscosity scheme are reassessed. Various shock problems are used to tune Hyperviscosity in the new DGSEM framework.

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