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LES of a bluff-body stabilized premixed flame using discontinuous Galerkin scheme YU LV, MATTHIAS IHME, Stanford University, STANFORD UNIVERSITY TEAM — This talk focuses on the development of a high-order discontinuous Galerkin (DG) method for application to chemically reacting flows. To enable these simulations, several algorithmic aspects are addressed, including the time-integration of multi-step chemical reactions, the incorporation of detailed thermo-viscous transport properties, and the stabilization of high-order solution representation. This DG solver is applied in implicit LES of a turbulent bluff-body stabilized propane/air premixed flame. The simulation results for cold-flow and reacting conditions are reported and compared to experimental data.

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