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Numerical Simulation of Highly Turbulent Hydrogen Combustion

ANDREW ASPDEN, JOHN BELL, MARC DAY, Lawrence Berkeley National Laboratory — The behaviour of hydrogen combustion under highly turbulent conditions is investigated. Simulations are performed using a parallel low Mach number adpative mesh computational method. The study was designed such that the chemical kinetics are well-resolved while relying on an implicit LES approach to capture the turbulence. We present numerical results to validate the approach and discuss the implications for hydrogen combustion in this regime.

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