

Abstract Submitted  
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**Scalable FDF Simulation of Reacting Flows** PATRICK H. PISCIUNERI, S. LEVENT YILMAZ, University of Pittsburgh, PETER A. STRAKEY, National Energy Technology Laboratory, MEHDI B. NIK, PEYMAN GIVI, University of Pittsburgh — The “irregularly portioned Lagrangian Monte Carlo-finite difference” (IPLMCFD) methodology is developed for efficient large eddy simulation (LES) via the filtered density function (FDF) subgrid scale closure. This methodology is particularly suited for simulation of chemically reacting flows and offers efficient utilization of thousands of processors. Various aspects of the scalability are presented for the LES of several premixed and non-premixed turbulent flames at low and high speeds. This method paves the way for petascale LES/FDF.

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