Abstract Submitted
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Lag-model for dissipation of scalar variance in LES[1] SERGEI CHUMAKOV, Stanford University — Modeling the dissipation term in transport equation for the subgrid-scale (SGS) scalar variance is of high importance in LES of reacting flows. We propose a new approach to model the dissipation which is based on averaging of the source term for the SGS variance along LES Lagrangian trajectories. The averaging is performed backwards in time using a particular weight function with the peak at some non-zero characteristic time T, the "lag" time. The method is based on the notion of the non-zero cascade time scale, i.e., the production and dissipation terms are not assumed to be correlated spatially but rather temporally along LES Lagrangian trajectories. The approach results in the addition of one extra transport equation to the system, bringing the total number of auxiliary equations to two. *A priori* tests show reasonably good prediction of the SGS variance dissipation rate. Results of an *a posteriori* test for a reacting flow will be shown.

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