

Abstract Submitted
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Transported PDF modeling for pulverized coal combustion¹

XINYU ZHAO, DANIEL C. HAWORTH, Pennsylvania State University — A transported probability density function (PDF) method has been applied to the simulation of pulverized coal combustion. A Lagrangian particle/Eulerian mesh algorithm has been employed to treat the gas phase. An independent set of Lagrangian parcels are used to model the solid phase (pulverized coal). The two phases are coupled by particle-source-in-cell technique and by source term redistribution models. Other high-fidelity models, such as photon Monte Carlo radiation model, are integrated into the PDF-coal framework. Temperature and global characteristics of coal combustion are compared with experimental data. Sensitivities of the results to model variations are explored.

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