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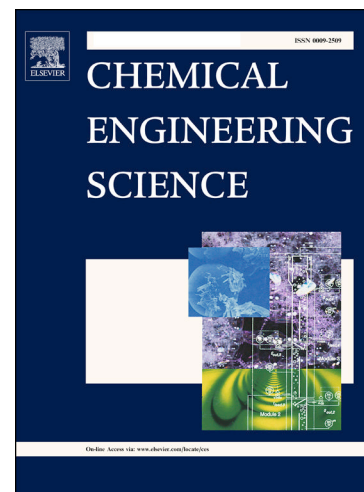
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A Delayed Detached Eddy Simulation Model with Low Reynolds Number Correction for Transitional Swirling Flow in a Multi-Inlet Vortex Nanoprecipitation Reactor

Zhenping Liu,[†] James C. Hill,[‡] Rodney O. Fox,[‡] Alberto Passalacqua,[†] and
Michael G. Olsen^{*,†}

*Department of Mechanical Engineering, Iowa State University, Ames, and Department of
Chemical and Biological Engineering, Iowa State University, Ames*

E-mail: mgolsen@iastate.edu

Abstract

The objective of the presented work is to verify a delayed detached eddy simulation (DDES) model for simulating transitional swirling flow in a micro-scale multi-inlet vortex reactor (MIVR). The DDES model is a $k-\omega$ based turbulence model with a low Reynolds number correction applied to the standard $k-\omega$ model such that the Reynolds-averaged Navier-Stokes (RANS) component of the DDES model is able to account for low Reynolds number flow. By limiting the dissipation rate in the k -equation, the large-eddy simulation (LES) part of the DDES model behaves similarly to a one-equation sub-grid model. The turbulent Reynolds number is redefined to represent both modeled

*To whom correspondence should be addressed

[†]Department of Mechanical Engineering, Iowa State University, Ames

[‡]Department of Chemical and Biological Engineering, Iowa State University, Ames

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