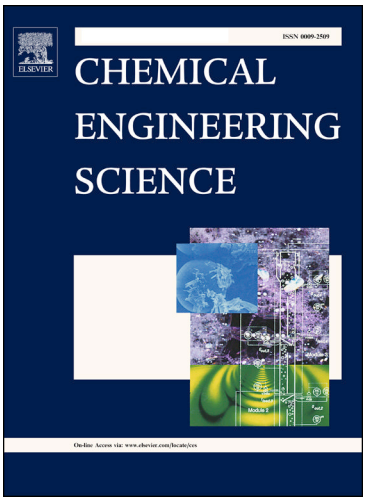

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A Delayed Detached Eddy Simulation Model with Low Reynolds Number Correction for Transitional Swirling Flow in a Multi-Inlet Vortex Nanoprecipitation Reactor

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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-ω based turbulence model with a low Reynolds number correction applied to the standard k-ω 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

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