131e Mixing Times and Mixing Time Correlations Revisited by Means of Les

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The mixing performance in a turbulent stirred vessel provided with a Rushton turbine is studied numerically by means of large eddy simulations (LES). To the LES (with a Smagorinsky subgrid scale model), a finite volume scheme is coupled that solves the convection-diffusion equation of a passive tracer. Numerical simulations such as those presented possess all information needed to enable a careful comparison between simulated mixing times and those obtained by experiments and correlations. A parameter study is carried out by varying impeller size and injection posotion of a passive tracer. Generally, the simulated mixing times are close to empirical mixing correlations. Finally, Ruszkowski's correlation is re-evaluated and commented.