Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

Variance and Skewness Evolution in Transient Taylor Dispersion[1]
KEITH MERTENS, ROBERTO CAMASSA, RICH MCLAUGHLIN, University of North Carolina, Mathematics, NICK MOORE, Courant Institute of Mathematical Sciences, MATT HERNANDEZ, WILLIAM MILLIKEN, University of North Carolina, Mathematics — This talk will report on a combined numerical, experimental, and theoretical study of the variance and skewness evolution for passive scalar particles transported in pipe and channel flows, with explicit differences between these two cases illustrated and explained. We will investigate the dependence of initial conditions and Peclet number in effecting evolution dynamics within the first diffusive timescale. Questions concerning how the properties of a given initial condition determine the time required for asymptotic theory to become valid will also be addressed.

[1]NSF

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Date submitted: 06 Aug 2010 Electronic form version 1.4