Abstract Submitted
for the DFD05 Meeting of
The American Physical Society

WITHDRAWN: Taylor limit of equilibration for mass transport in transversely bounded rectilinear flows JUIN YU, West Virginia University Tech — The multimode diffusion approximation for solute dispersion in transversely bounded shear flows owes its origin to the formal method of eigenmode expansion. It is put forth upon the premise that a quasi-steady condition termed the Taylor limit of equilibration exists in the course of time when equilibrium estimates of the residual terms of the concentration distribution can be realistically made contigent to the evolution of their primary counterparts. By applying the Green's function for the diffusion equation, this paper provides a qualifying account for the establishment of the Taylor limit. A method of successive approximation is derived for the determination of the principal mode coefficient functions with the inclusion of bulk reaction and longitudinal diffusion. The resulting equations governing the evolution of these coeficient functions are truncated to conform to the multimode diffusion type. Examples are given to illustrate the attainment of a convergent solution.

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Date submitted: 03 Nov 2005 Electronic form version 1.4