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Numerical Study of Transport in Viscous Vortex-Dipole Flows[1]

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— Material transport in viscous vortex-dipole flows is studied numerically using a high order finite difference method and the Lamb-dipole as the basic unit in the initial condition. The vorticity field and streamline pattern are displayed, and material curves are tracked in order to visualize particle trapping and detrapping in the dipole. Results are presented for evolution of one dipole, and the interactions of two and three dipoles.

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