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Luan T Hoang*, Department of Mathematics and Statistics, Texas Tech University, 1108 Memorial Circle, Lubbock, TX 79409. *Asymptotic expansions for the Lagrangian trajectories from solutions of the Navier-Stokes equations.*

Consider any Leray-Hopf weak solution of the three-dimensional Navier-Stokes equations for incompressible, viscous fluid flows. We prove that any Lagrangian trajectory associated with such a velocity field has an asymptotic expansion, as time tends to infinity, which describes its long-time behavior very precisely. (Received June 26, 2020)