1046-35-1209 **C David Levermore*** (lvrmr@math.umd.edu), Department of Mathematics, Bldg 084, University of Maryland, College Park, MD 20742, and **Weiran Sun** (wrsun@math.umd.edu), Department of Mathematics, Bldg 084, University of Maryland, College Park, MD 20742. *Local Well-Posedness of a Dispersive Navier-Stokes System.*

We establish local well-posedness and smoothing results for the Cauchy problem of a degenerate dispersive Navier-Stokes system that arises from kinetic theory. Under assumptions that the initial data satisfy asymptotic flatness and non-trapping conditions, we show there exists a unique classical solution for a finite time. Due to degeneracies in both dissipation and dispersion for the system, different components of the solution gain different regularity. The coupling of these components is analyzed using pseudodifferential operators. (Received September 15, 2008)