1086-VG-2262   **Muhammad Irfan Hameed*** (`mhameed@uscupstate.edu`), Division of Mathematics & Computer Science, USC UPSTATE, 800 University Way, Spartanburg, SC 29303. *Breakup of an extending particle-laden liquid jet.*

A mathematical model is derived to study the effect of solid particles for an extending liquid jet. Governing equations for the dynamics are derived for Stokes flow using long wavelength assumptions for the capillarity-driven flow, and the influence of the force-free particle is represented by a symmetric hydrodynamic force dipole. The theoretical calculations based on this hybrid long wavelength and singularity approach yield qualitatively accurate and encouraging agreement with experimental observations. Results are presented for one particle centered or off-center (with respect to the period of the jet) and for two particles. (Received September 25, 2012)