

Near-wall dynamics of a neutrally-buoyant particle in Hiemenz flow

Qing Li

Laboratoire de Génie Chimique, Institut de Mécanique des Fluides de Toulouse

Two-phase suspensions encountered in various engineering applications (like crude oil extraction, elaboration of food, concrete or cosmetics), can exhibit rich dynamics when submitted to flow in complex geometries. Predicting the response of such heterogeneous material under flow is an important issue in view of applications. To build these predictive models, basic understanding of the suspension flow physics at different scales is required for configurations such as pipe flow through an elbow or T-shape section, mixing a solid-liquid dispersion by a rotating impeller, ... We study suspension flows normal to an obstacle, which have seen limited attention with the carrier fluid being liquid phase.