

1145-76-2438

Nguyenho Ho* (nho@bridgew.edu), 7 north border rd, Stoneham, MA. *Swimming Near a Solid Wall in a Brinkman fluid*. Preliminary report.

The incompressible Brinkman equations are used to describe a fluid with sparse stationary obstacles, which is controlled by a resistance parameter. Here, we study an infinite-length swimming sheet near a solid wall. Using small amplitude analysis, to the second-order solution, we obtain the nondimensional swimming speed, the mean pressure drag, and the mean viscous drag. We also derive the propulsive velocity using lubrication theory approach. The outcomes are analyzed to see the effects of the resistance parameter on the overall swimming behavior. A numerical study is also presented to compare the analytical results with the finite-length swimmers obtained from simulating data. (Received September 25, 2018)