

## ABSTRACT

General Classical Flow due to the Longitudinal and Torsional  
Oscillation of a Rod

Amanda Rambaran

The unsteady flow of an incompressible viscous fluid, characterized by the motion of a long, circular, cylindrical rod, oscillating both longitudinally and torsionally at different frequencies and amplitudes is examined. Further, slip at the surface of the cylindrical rod is taken into consideration. Analytical expressions for the velocity field, the tangential drag and the work done by the drag force have been obtained and are displayed graphically using particular values of the flow parameters. These are plotted for different values of slip, from perfect slip to no-slip, so as to get some insight into the effects of slip.

Keywords: Amanda Rambaran; Oscillation; Viscous, Longitudinal; Torsional; Different Frequencies; Different Amplitudes; Slip.