On the Motion of a Rigid Body in a Viscous Liquid

Ana Leonor Silvestre

`silvestre@math.ist.utl.pl`

Center of Applied Mathematics - Lisbon, Portugal

This talk is devoted to the motion of a rigid body B in an infinitely extended Navier-Stokes liquid L. The motion of B is caused by external forces and torques and by a distribution of velocity on its boundary, which is generated by the body itself. We consider the equations of motion of the system body+liquid B, L written in a frame attached to the body, and the external forces/torques given in an inertial frame, so that they become unknown in the frame in which we study the motion of the system. Some results on the existence and uniqueness of solutions to the coupled system that describes the motion of B,L and the unknown forces/torques will be presented.