

Regularity result for 3D incompressible fluid-rigid body interaction problem

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We study a 3D fluid-rigid body interaction problem. The fluid flow is governed by 3D incompressible Navier-Stokes equations, while the motion of the rigid body is described by a system of ordinary differential equations called Euler equations for the rigid body. Our aim is to prove a generalization of the regularity result for weak solutions to the Navier-Stokes equations, which says that a weak solution that additionally satisfy Prodi-Serrin $L^r - L^s$ condition is smooth. This is a joint work with Boris Muha and Šarka Nečasová.