Abstract

Strong L^p-solutions to certain fluid-solid interaction problems

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In this talk we consider the the movement of a rigid body in a Newtonian fluid under the influence of gravitation. We show that the system consisting of the Navier-Stokes equations coupled with the balance laws for the momentum and the angular momentum admits a unique, local, strong solution in the L^p-setting. Note that the fluid-solid interface is a moving one and has to be found as part of the solution process. This is joint work with Karoline Goetze.