

The motion of the rigid body in a viscous fluid with collisions

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Abstract. We consider the problem of motion of a rigid body in an incompressible viscous fluid, filling a bounded domain. It is known that the classical non-slip boundary conditions yield the *paradoxical* conclusion of *impossibility of collision* of the body with the boundary of the domain.

We study the case when instead of the non-slip conditions the Navier slip conditions are posed on the boundary. For this model *the global existence of a weak solution* is proved, which permits *collisions* with the boundary of the domain.

This result is a joint work with S. Nečasova (Institute of Mathematics, Prague, Czech Republic).