Self-propelled motion in a viscous compressible fluid

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Abstract

We focus on an existence of a weak solution to a system describing a self-propelled motion of a single deformable body in a viscous compressible fluid which occupies a bounded domain in the 3 dimensional Euclidean space. The considered governing system for the fluid is the isentropic compressible Navier-Stokes equation. We present a proof of an existence of a weak solution up to a collision. This is a joint work with Šárka Nečasová.

Keywords: Self-propelled motion, compressible fluid, deformable structure.