

# The motion of a solid body in a Stokes or Navier-Stokes flow

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I will consider a fluid-solid model where a solid is immersed in flow constrained in a 2D infinite channel. After presenting some results on the stationary problem and the existence of local or global time-dependent solutions, the focus will be put on the various open questions and challenges concerning periodic solutions. The talk is based on an ongoing research program with G. Galdi, F. Gazzola, C. Grandmond, M. Hillairet, C. Patriarca and G. Sperone.