

Time-periodic solutions to a compressible fluid
and a viscoelastic beam interaction problem

Ondrej Kreml

Institute of Mathematics, Academy of Sciences of the Czech Republic

Abstract

We study a nonlinear fluid-structure interaction problem between a viscoelastic beam and a compressible viscous fluid. The beam is immersed in the fluid which fills a two-dimensional rectangular domain with periodic boundary conditions. Under the effect of periodic forces acting on the beam and the fluid, at least one time-periodic weak solution is constructed which has a bounded energy and a fixed prescribed mass. This is a joint work with V. Macha, S. Necasova and S. Trifunovic.