

On the existence of weak solution to the coupled fluid-structure interaction problem for non-Newtonian shear-dependent fluid

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We study the existence of weak solution for unsteady fluid-structure interaction problem for shear-thickening flow. The time dependent domain has at one part a flexible elastic wall. The evolution of fluid domain is governed by the generalized string equation with action of the fluid forces. The power law viscosity model is applied to describe shear-dependent non-Newtonian fluids.

References

- [1] A. Hundertmark-Zaušková, M. Lukáčová-Medvid'ová, Š. Nečasová: On the existence of weak solution to the coupled fluid-structure interaction problem for non-Newtonian shear-dependent fluid. Preprint 2012, University of Mainz.