Zhukov, M. Yu.; **Shiryaeva, E. V.**

Electrohydrodynamic rotation flow in suspended a liquid thin membrane. (Russian)

Zbl 1224.76174

Izv. Vyssh. Uchebn. Zaved., Sev.-Kavk. Reg., Estestv. Nauki 2009, No. 5, 18-23 (2009).

In a paper by *A. Amjad* et al. ["A liquid film motor", (2008), arXiv:0805.049], it was announced that a rotational motion of a liquid in a suspended thin film under the action of an electrical field on the film boundaries is experimentally recognized. The effect was considered as a result of a reorientation of the liquid molecule dipole moment under the action of an electric field of strong intensity. Here, a mathematical model is introduced to explain the effect from the classical point of view. The finite element method and the projective algorithm are applied in the numerical realization.

Reviewer: Sergei Zhuravlev (Moskva)

MSC:

76U05 General theory of rotating fluids