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Dynamics of droplet spreading on Non-Newtonian liquid films[1]
GRIGORIOS-ATHANASIOS IOANNIDIS, GEORGE KARAPETSAS, Aristotle University of Thessaloniki — We investigate the dynamics of a liquid drop as it spreads along the interface of a liquid film. We consider the case of a liquid layer which exhibits non-Newtonian characteristics and is described by the Ostwaldde Waele constitutive law. In the limit of both a thin droplet and a thin subphase, we use lubrication theory to derive equations for the positions of the interfaces. We use a finite-element formulation to obtain numerical solutions of the evolution equations. The effects of the physical parameters and rheological characteristics on the interface shapes are studied.

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