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Ripples in wetting films VLADIMIR AJAEV, Southern Methodist University, ROUMEN TSEKOV, University of Karlsruhe, Germany, OLGA VINOGRADOVA, Institute of Physical Chemistry, Russia — Wavy shapes of liquid surface are often observed in large-scale flows, i.e. ripples on a surface of a lake, but are rather unusual to find in microscale systems. We show theoretically that deformations in a draining wetting film, created when a bubble is pressed against a solid wall, can result in ripples on the liquid surface. We consider a regime when dynamics of the system is determined by a complex interplay between disjoining pressure and surface tension, while the effect of gravity is negligible. Numerical simulations based on axisymmetric lubrication-type model show evolving shapes with many points of maximum and minimum and allow us to determine the conditions when such shapes can be observed. Experimental evidence of the proposed mechanism will be discussed, including direct comparison with recent observations of the so-called 'wimple' shapes (L.Y.Clasohm et al., Langmuir **21** 8243, 2005) in films of thickness of the order of 100 nm.

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