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Equilibrium and stability of an elastic meniscus[1]
MARCO RIVETTI, ARNAUD ANTKOWIAK, Institut Jean le Rond d'Alembert, UPMC & CNRS — A liquid-air interface touching a solid wall gives rise to a liquid meniscus, whose shape has been well known for two centuries and results from the balance between capillarity and gravity. We investigate the case in which a portion of the liquid interface has been replaced by a soft strip, adding the elastic ingredient to this physical problem. We experimentally study the equilibrium configurations, from small to high non-linear deformations, and we compare to a 2D theoretical model. Stability of the system involving 3D corrections is also addressed.

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