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Simulations of contact angle induced pearling for sliding drops[1]
SCOTT MCCUE, LISA MAYO, TIMOTHY MORONEY, Queensland University of Technology — Droplets sliding down an incline can develop a corner or a cusp at their rear, or undergo a pearling transition whereby the tail breaks up into a number of smaller satellite droplets. These phenomena have been of interest since the experimental work of Podgorski et al. (2001) *Phys Rev Lett* **87**, 036102. It appears that the experimental investigation of this problem is limited due to the inherent difficulty of minimising contact angle hysteresis, whereby physical or chemical heterogeneities of the substrate cause pinning and distortion of the droplet. By applying a lubrication model with a disjoining pressure term, we investigate these flows numerically in order to further shed light on how certain conditions (such as contact angle) affect the corner-cusp-pearling transition.

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