

Abstract Submitted
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Droplets on a deformable membrane with uniform and anisotropic tension RAFAEL SCHULMAN, McMaster University, RENÉ LEDESMA-ALONSO, THOMAS SALEZ, ELIE RAPHAËL, ESPCI, KARI DALNOKI-VERESS, McMaster University — We examine the deformation produced by microdroplets atop thin elastomeric free-standing films. Under the action of surface tension, the droplets deform the membrane thereby forming a bulge. For films with isotropic tension, we measure the contact angles of the droplet and bulge relative to the planar film surrounding the droplet as a function of membrane tension. We find the measured contact angles to be in excellent agreement with a model which features a force balance at the contact line. Experiments are also performed on membranes with anisotropic tension and compared to theory. In this case, droplets are non-spherical and generate significant deformation of the surrounding film which becomes non-planar.

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