

Abstract Submitted  
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**Universal deformation of soft substrates near contact line reveals solid surface stresses** ROBERT STYLE, JOHN WETTLAUFER, Yale University, LARRY WILEN, Unilever, ERIC DUFRESNE, Yale University — We study how sessile droplets behave on soft substrates. Using confocal microscopy, we investigate how droplet surface tension (and Laplace pressure) deforms the substrate. We show that the near-tip shape of the wetting ridge is entirely determined by the surface tensions of the three contacting phases. In particular we can use this observation to (i) directly measure solid-vapour and solid-liquid surface tensions, (ii) resolve how out-of-plane force balance is ensured at the contact line.

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