

Abstract Submitted  
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**Investigation of Contact Angle Behavior and Tilting Stability of Drops on Rough Surfaces**<sup>1</sup> JASON SCHMUCKER, EDWARD WHITE, JOSHUA OSTERHOUT, Texas A&M Univeresity — A method for measuring full-field, instantaneous drop interface profiles on rough surfaces has been implemented to study contact angles on metallic surfaces with micron-scale roughness. Water drops measured span a range of Bond numbers from  $Bo = 0.5$  to 5 on roughness in the range of  $R_A = 0.8$  to 4.9. Experiments were conducted to provide data on contact angle variations about a single drop's contact line and to investigate how contact angle depends on surface roughness. The method has also been used to study the stability of drops to sliding on tilted surfaces. Modifications of the contact line and distributions of contact angle are observed as surface angle is increased to the point of incipient sliding. The sensitivity of the stability parameters to the initial configuration of the drop is detailed, particularly in reference to initial contact line shape. Results such as critical inclinations and contact angles are discussed and compared with previous studies in the literature, beginning with Bikerman [J.Coll.Sci. 5:4, 1950] and including ElSherbini and Jacobi [J.Coll.Sci. 273, 2004].

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