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**Effects of contact line hysteresis and surface tension on contact line pinning of inclined droplets.** VIATCHESLAV BEREJNOV, ROBERT E. THORNE, Physics Department, Cornell University, Ithaca, NY, 14853-2501 — The stability and pinning of drops on inclined surfaces is of fundamental and technological interest. Contact line dynamics depends on the properties of the liquid, the solid surface and the manner in which line motion is driven. Achieving reproducible final contact line and drop shapes is important in biotechnology applications where drops are used as mini-reactors, such as in structural genomics where sessile drops are used for protein and virus crystallization. We will describe experiments investigating pinning and deformation of drops containing pure liquids, proteins and colloids, placed on substrates with a range of surface treatments. Proteins affect contact angle hysteresis at low concentrations, and surface tension at high concentration, leading to two different regimes of pinning. Theoretical approaches that can be useful in understanding our results will also be presented.

Viatcheslav Berejnov
Physics Department, Cornell University, Ithaca, NY, 14853-2501

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