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Contact line dynamics on a pseudo-brush ROMAIN LHERMER-
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ANDREOTTI, Laboratoire de Physique et Mecanique des Milieux Heterogenes de
l'ESPCI, 10 rue Vauquelin 75005 Paris, France — Polymer brushes are nanomet-
ric layers of polymers that are attached to a solid surface. They are well-known
for strongly modifying the mechanical properties of the surface. Although friction
and slippage experiments have been performed on such systems [1], the impact of
brushes on wetting dynamics has not yet been investigated. We report measurements
of contact line dynamics of simple liquids over so-called pseudo-brushes adsorbed on
silicon. We will show that this system exhibits (i) a surprisingly low hysteresis, a
feature of great utility when studying the impact of added defects on the contact
angle hysteresis, and (ii) a specific contribution to the dissipation, which is localized
at the contact line, in addition to the viscous dissipation in the liquid wedge. The
pseudo-brush contribution can be isolated from the total dissipation [2] and a simple
model is used to explain the role of the pseudo-brush.

[1] C. Cohen, F. Restagno, C. Poulard, L. Léger, *Soft Matter* 7, 8535 (2011)

[2] G. Delon, M. Fermigier, J.H. Snoeijer, B. Andreotti, *J. Fluid Mech.* 604, 55-75
(2008)

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