

Abstract Submitted
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Triple line kinetics in solid-state dewetting¹ ASHWANI TRIPATHI, OLIVIER PIERRE-LOUIS, Univ Lyon I UA 442 CNRS — Solid-state dewetting has been studied in a large number of experimental systems, such as SOI (Si on amorphous SiO₂)², or metal films on various substrates³. Several theoretical approaches have been proposed in the past 10 years to understand this phenomena, ranging from Kinetic Monte Carlo to phase field, and continuum Mullins-like models. We present a continuum model⁴ which addresses the question of the limit of validity of the usual approximation of a constant contact angle at the triple line between the solid, the film, and the vacuum (or vapor). Our results suggest that the Young relation is subject to systematic deviations, which could be measured in experiments. In addition, the so-called mass shedding effect, which leads to the breakup of the film at a finite distance from the triple-line, can be accelerated by orders of magnitude due to wetting effects.

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²E Bussmann, F Cheynis, F Leroy, P Mller and O. Pierre-Louis, *New J. Phys.* 13 043017 (2011).

³C.V. Thompson, *Annu. Rev. Mater. Res.* **42**, 399 (2012).

⁴A. Tripathi, O. Pierre-Louis, preprint.

Ashwani Tripathi
Univ Lyon I UA 442 CNRS

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