Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

Elastocapillary snapping ARNAUD ANTKOWIAK, CNRS & UPMC Univ Paris 06, Institut Jean Le Rond d'Alembert, Paris, France, AURELIE FARGETTE, Ecole Normale Superieure, Departement de Physique, Paris, France, SEBASTIEN NEUKIRCH, CNRS & UPMC Univ Paris 06, Institut Jean Le Rond d'Alembert, Paris, France — An elastica buckled in the form of an arch is subjected to a transverse force. Above a critical load value, the buckling mode is switched and the elastica takes the form of a reversed arch. This is the well-known snap-through phenomenon which has been extensively studied in solid mechanics. Here, we revisit this phenomenon and show that capillary forces may promote snapping of a buckled polymer strip. We report detailed experiments of this new paradigm for elasto-capillary interactions, and the obtained results are in close agreement with a simple elastic stability theory.

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Date submitted: 23 Jul 2010 Electronic form version 1.4