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Snap-Through of Graphene: An Elasto-Capillary Perspective TILL WAGNER, DAMTP, University of Cambridge, DOMINIC VELLA, OCCAM, University of Oxford — Understanding the interaction between graphene flakes and various substrates is of crucial importance for nanoelectromechanical systems (NEMS) applications, among others. The 'snap-through' instability of graphene flakes placed onto corrugated substrates has recently received much attention as a potential assay for the study of this interaction. A sharp transition has been found in the morphology of the graphene between a) closely adhering to the corrugations of the substrate and b) lying almost completely flat on top. Which of these morphologies is observed depends on the geometry of the substrate and the mechanical properties of the flake. In this talk we shall focus on understanding the nature of this transition and, in particular, the 'sharpness' of the transition. We investigate how the location of snap through and its sharpness might be used to yield estimates of adhesion strength and friction with the substrate.

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