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Abstract for an Invited Paper for the MAR09 Meeting of the American Physical Society

Micro-Origami: Elastic Instability of Polymer Films

PASCAL DAMMAN, Université de Mons-Hainaut

Upon compression, thin (rigid) elastic membranes supported on a soft elastic solid spontaneously deviate from their flat geometry by forming regular wrinkles. How can we control the wavelength and the symmetry of the wrinkle patterns? What is the influence of defects? Why should we observe focalisation of deformation in folds for large strains? During my talk, I will review our approaches to tackle these questions.