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Effects of elasto-capillarity on periodic films folding and unfolding OSAMA BILAL, ANDRE FOEHR, JINWOONG CHA , CHIARA DARAIO, Department of Mechanical and Process Engineering, ETH-Zurich — Thin films interact with liquid surfaces through elastocapillary forces. These forces can control structural deformations of wetted thin films. Deformations arise from the interplay between the elastic strain energy in the bulk of the films, and the energy on the surface. In this work, we study the interplay between the surface tension of water and periodic patterns on different thin films. Our analysis explores the utilization of these periodically patterned films for the deployability of micro and nano-systems. The main attention is paid to the experimental results of this phenomenon and the results are supported by numerical analysis.

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