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Elastocapillary-driven snap-through instability AURELIE FARGETTE, ARNAUD ANTKOWIAK, SEBASTIEN NEUKIRCH, Institut Jean le Rond d'Alembert, UPMC — The snap-through instability, which is present in a wide range of systems ranging from carnivorous plants to MEMS, is a well-known phenomenon in solid mechanics : when a buckled elastic beam is subjected to a transverse force, above a critical load value the buckling mode is switched. Here, we revisit this phenomenon by studying snap-through under capillary forces. In our experiment, a droplet (which replaces the usual dry load) is deposited on a buckled thin strip, clamped horizontally at both ends. In this setup both the weight of the drop and capillary forces jointly act toward the instability. The possibility of reverse elastocapillary snap-through, where the droplet is put under the beam, is then tested and successfully observed, showing the predominance of capillary forces at small enough scales.

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