

Allgemeines Physikalisches Kolloquium

Donnerstag, 17.06.2021 um 16 Uhr c.t.
Online-Kolloquium

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Soft Interfaces at Contact: Wetting and Instability

The contact of soft interfaces lies at the core of many natural phenomena and technologies, from wetting and coating to the growth of biological tissue. When sufficiently soft, these systems are no longer governed by their elasticity, but interfacial forces (surface tension) take over. Here we present a number of cases where surface tension dominates over bulk elasticity, fundamentally altering the physical phenomena at play. We first discuss a remarkable resemblance between the instability of soft solid cylinders and the breakup of liquid jets into small droplets. We then turn to applications of wetting, where liquid drops are placed either onto soft polymer networks or onto polymer brushes. The resulting droplet spreading dynamics exhibits features that have no counterpart on rigid surfaces, which thereby offers an interesting route for the design of adaptive coatings.