

## Wetting fronts underneath impacting drops on oily substrates

*Montag, 4. Dezember 2023 18:10 (20 Minuten)*

When a droplet impacts on a plane solid covered by an oil layer of few micrometers thickness, an air layer is entrained. The moment of rupture is determined by the thickness profile and the presence of impurities in the experimental configuration. A central dimple in the droplet is surrounded by a broad plateau of only slowly varying thickness with radius. After initiation of contact, the thin air film is expelled by a wetting front, which surprisingly develops a fingering instability in some cases. We study the propagation of the wetting fronts from high-speed interferometric videos. We expect that both oil layer and droplet properties affect the contact spreading, and the air layer thickness should have a minor effect. Apparently, the oil layer has crucial impact on the contact line velocity.

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**Sitzung Einordnung:** Poster Session