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Wetting by active fluids

Friday, 17 April 2026 14:00 (20 minutes)

In equilibrium fluids, wetting is controlled by the competition of three surface tensions between the three phases (liquid, gas, solid). When the particles comprising the fluid become self-propelled, the question of wetting begins with a proper definition of surface tension (which may not be unique out of equilibrium). I will present a robust mechanics-based definition for surface tension. I will use this definition to explore the properties of a droplet at contact with a solid. It will appear that the angle of contact of an active droplet is no more governed by the Young-Dupré equation.

With Y. Zhao, J. Tailleur, A. Daerr, R. Zakine, Y. Kafri

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