

Nonlinear soft interfaces: Wetting, adhesion, flow, and fracture

Université Paris Cité, **18 mars 2024** – Amphithéâtre Buffon, 15 rue Hélène Brion, Paris 13^e

We propose to discuss recent experimental and theoretical progress highlighting nonlinear effects in the mechanics of soft interfaces, which involve a wide range of phenomena crucial for numerous applications in wetting, imbibition, and adhesion processes. We will start notably on the coupling between surface tension and elasticity and go beyond by considering also the role of surface defects, multiphase complex materials as well as the deformation up to rupture of soft materials.

09h00 Start

Invited talks are indicated in blue

- 09h15 – 09h40 [Bruno Andreotti \(LP ENS Paris\)](#) Statics and dynamics of soft wetting
- 09h40 – 10h05 [Catherine Barentin \(ILM, Lyon\)](#) Wetting of yield-stress fluids
- 10h05 – 10h30 [Camille Duprat \(LadhyX, Palaiseau\)](#) Drop spreading on poroelastic substrates

10h30 – 10h45 Coffee break and discussions

- 10h45 – 11h10 [Jordi Ortin \(Barcelona\)](#) Pressure-saturation hysteresis of two-phase flows in disordered media
- 11h10 – 11h35 [Emmanuel Siéfert \(Liphy, Grenoble\)](#) Dynamic elastocapillary coalescence of slender structures

Short talks (10 min)

- 11h35 Megan Delens, (GRASP, Liège) Superposition de ménisques capillaires : courber l'interface liquide pour micro-manipuler des objets flottants
- 11h45 Pierre Brice Bintein (MSC, Paris) Dynamiques de lignes de contact oscillantes
- 11h55 Alice Etienne-Simonetti (LPS) Surface deformation of a thin liquid film in the vicinity of a vertical fiber
- 12h05 Jiayu Wang (D'Alembert, Paris) Surface wrinkling of a thin liquid-infused membrane

12h15 – 13h45 Lunch

- 13h45 – 14h10 [Matteo Ciccotti, \(ESPCI, Paris\)](#) Soft coring: how to get a clarinet out of a flute?
- 14h10 – 14h35 [Loic Vanel \(ILM, Lyon\)](#) Nonlinear effects on crack propagation and interaction

Short talks (10 min)

- 14h35 Anthony Varlet (MSC, Paris) Dip-coating sur substrats déformables en mouillage partiel
- 14h45 Joséphine Van Hulle, (GRASP, Liège) Droplet spreading and transport: the role of substructures
- 14h55 Etienne Jambon-Puillet (LadHyX) Pendant droplets under a wet substrate pin on surface defects despite having no contact line
- 15h05 Friedrich Walzel (Strasbourg) Adhesive bubbles and drops between circular frames

15h15 – 15h45 Coffee break and discussions

- 15h45 – 16h10 [Jacco Snoeijer \(Twente\)](#) Soft wetting: Nonlinearity at large deformations
- 16h10 – 16h35 [Thierry Ondarçuhu \(Toulouse\)](#) Mouillage à l'échelle nanométrique : désorption moléculaire à la ligne de contact
- 16h35 – 17h00 [Axel Huerre \(MSC Paris\)](#) Water dewetting on ice

Short talks (10 min)

- 17h00 Philippe Brunet (MSC Paris) Adhésion de la glace sur différents substrats
- 17h10 Kexin Zhao (PMMH, Paris) When marbles challenge pearls
- 17h20 Auriane Huyghes Despointes, (PMMH, Paris) Acrobatics of viscous marbles

17h30 End

Le mini-colloque de la RNL 2024 est organisé par Stéphane Santucci (ENS Lyon), Etienne Reyssat (PMMH).