

# Colloquium Thermo- and Fluid Dynamics

## Interfacial fluid mechanics: From beer foams to cell membranes

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Fluid–fluid interfaces, laden with polymers, particles or other surface-active moieties, often show a complex response to deformations, in particular when strong lateral interactions are present between these moieties. The response of the interface can then no longer be described by an isotropic surface tension alone and the boundary condition in many fluid mechanical problems becomes somewhat complicated. Depending on your view on life this can be viewed as a nuisance or an opportunity to design new materials.

These “structured” soft-matter interfaces are omnipresent in industrial applications, ranging from foods (beer foam), cosmetics and pharmaceuticals, to oil recovery. Also many biomedical applications involve such interfaces, including those involving lung surfactants and biofilms, or even cell membranes. In this talk I will give an overview of developments in measurement techniques, constitutive modelling, computational aspects and how these can be used in materials design.



Date: Wednesday, 20 April 2022

Time: 16:15 - 17:15h

Place: ETH Zurich, ML H 44

Host: Prof. Filippo Coletti, IFD