

Topic G: External Fields Effects

“Antibubbles, liquid onions, and bouncing droplets”

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In this talk, we emphasize our long series of experiments proving that the physical processes along fluid interfaces can be exploited for creating unusual fluidic objects. The discussion starts from the observation of antibubbles, exhibiting unstable liquid-air-liquid interfaces. We show that the lifetime of such objects has the same origin than floating/coalescing droplets onto liquid surfaces. By looking at the physical parameters, these interfaces could be stabilized by vibrating the liquid interfaces. This leads to the creation of droplets bouncing forever onto a liquid bath. The physical mechanisms will then be further analyzed for underlining the complexity of the observed phenomena. The possible applications in droplet manipulations are also envisaged.