

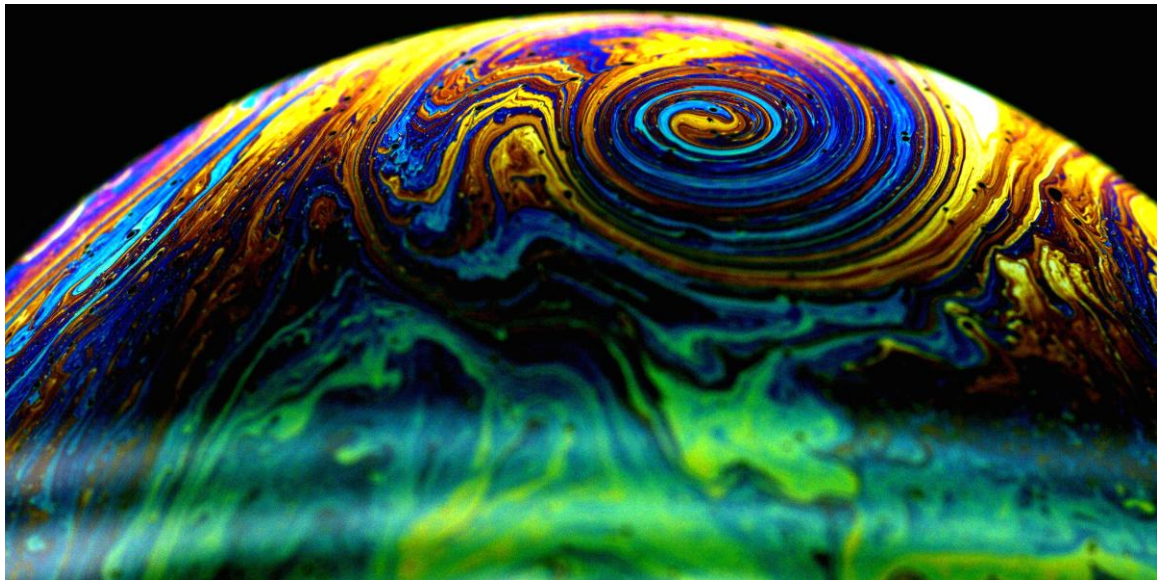
Hydrodynamics experiments using soap films and soap bubbles

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I will describe experiments using soap films and soap bubbles to illustrate the interest of these common objects to some fluid mechanics problems. The flow in the very thin layer of these films is basically two dimensional and this property brings fundamental differences with fluid flows in three dimensions as well as experimental simplification. I will use three examples for this talk : the interaction between a flow and different structures in fast flowing soap films, the measurement of viscous drag in turbulent soap film channels, and thermal convection in soap bubbles. In all these cases, the two dimensional nature of the flow allows to capture some of the key features of the underlying dynamics such as a symmetry breaking mechanism leading to locomotion of passive objects in the first case, the role of the structure of the turbulence on the scaling of the viscous drag in the second case, and the appearance of large scale vortices in the last case.



A vortex in a soap bubble.