LadHyX Seminar – September 25th, 10:45

J. John Soundar Jerome
(LMFA, Université Lyon 1)

Rapid liquid and gas entrainment flows

In this talk, I will present our recent work on liquid drag-out, and plunging jets. Whereas the drag-out problem is well-studied in the context of thin viscous coating processes, I will first show that rotary entrainment of water by an horizontal wheel leads to thin sheet formation along its axis. Based on an analogy with printer's instability, I shall then propose a mechanism for pattern formation in such large Reynolds number rotary Landau-Levich flows. The second problem which I wish to present here concerns air entrained by plunging water jets. Building upon a simple model based on momentum conservation in jets and plumes, I will describe the phenomenology of the maximum penetration depth of bubbles from thin jets to cascades.