



ICTS

INTERNATIONAL
CENTRE *for*
THEORETICAL
SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Seminar

- Title : Dynamics of bubble collapse and jetting at a liquid surface
- Speaker : Sangeeth Krishnan, Indian Institute of Technology Madras, Chennai
- Date : Wednesday, August 1, 2018
- Time : 11:30 AM
- Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore
- Abstract : The collapse of small bubbles at a liquid surface and the resulting jetting, a commonly observed phenomenon, is a fascinating problem because of the interplay between surface tension, inertia, gravity and viscous forces. We study three different aspects of interfacial fluid flows associated with bubble burst. The three flows include (a) the retraction and the opening of the cavity mouth soon after the thin film fragments, (b) the evolution of the unstable cavity below the free surface and, (c) the jetting at the bottom of the cavity due to flow focusing. Our study is motivated by the discrepancy between the existing experimental results and numerical simulations as well as by the question as to why the jet of capillary origin depends on gravity and how and when viscosity affects jetting. We propose and verify novel scaling relations for the expansion of the cavity mouth, the cavity collapse, and jetting.