

ICTS Seminar

Title : Transient Growth & Collapse Dynamics of a Spherical Vapor Bubble

Speaker : Raunak Bardia, University of Wisconsin-Madison, USA

Date : Friday, 4 January 2019

Time : 11:00 AM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : Vapor bubbles have been an important area of research in the past century owing to their ubiquity in multiphase flows. Moreover, the complexity of the physics governing bubble dynamics has been of significant academic interest because even a simple system of a spherical bubble is known to be riddled with complex underlying physics due to intimate coupling between liquid inertia, heat transfer, phase change, and compressibility. As part of my doctoral work, I have worked on the fundamental processes of homogeneous bubble growth and collapse that I will discuss in this talk. Our study of bubble growth has been used to analyze the assumptions made by direct numerical simulations with phase change that have become more prominent in recent years. Also, for bubble collapse, we aim to explain the reason for coupling between its two governing mechanisms of liquid inertia and heat transfer, which paves the way for improved control over bubble experiments.