ICTS Colloquium

Title : Gravitational Anomaly and fluid dynamics

Speaker : Loganayagam R, Institute for Advanced Study, USA

Date : Thursday, February 19, 2015

Time : 4:00 p.m.

Venue : ICTS Seminar Room, IISc Campus, Bangalore

Abstract : Anomalies are a set of fascinating phenomena in field theory whereby the usual conservation laws are modified in the presence of gauge or gravitational fields. The anomalies due to gauge fields have been observed in various forms over the past few decades whereas their gravitational analogues have long been thought of as too minute to be observed in foreseeable future.

In this talk, I will explain how this view has changed in recent years due to advances in thermal field theory and fluid dynamics. Finite temperature and chemical potential effects have surprisingly brought gravitational anomalies within the remit of observations. These fluid dynamical phenomena follow from a subtle consistency condition that relates gravitational response and thermal response.

While explicit proposals for experimental observations are still in their infancy, I will describe how these new effects have opened up the hope that gravitational anomalies might be observed within next few decades.