



**TIFR Centre for Interdisciplinary Sciences,
Narsingi, Hyderabad 500075**

Seminar

The cell cortex : A thin film of active matter

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Abstract: The cortex is a thin layer of cross-linked actin filaments with embedded myosin motors just beneath the cell membrane, and is responsible for many mechanical processes in morphogenesis. Active stress up-regulation by myosin motors and rapid restructuring of its constituents leads to viscous flows in the cortex. In the zygotes of *Caenorhabditis elegans*, these flows lead to (a) the establishment of cell polarity during the first asymmetric cell division and, (b) oscillatory patterns in the cortex prior to the establishment of cell polarity. We discuss a physical model of an active thin film viscous liquid with mechanochemical couplings that explains these phenomena. We also discuss experiments by which the macroscopic physical parameters of our model are measured.

Date: Thursday, April 11th 2013

Time: 11:30AM (Tea/Coffee at 11:15AM)

Venue: Conference Hall, TCIS

All are cordially invited