

ICTS Seminar

Title : Pattern formation in active matter

Speaker : Jemseena V, ICTS-TIFR, Bangalore

Date : Friday, June 9, 2017

Time : 10:00 AM

Venue : Amal Raychaudhuri Meeting Room, ICTS Campus, Bangalore

Abstract : Active materials are a novel class of driven nonequilibrium systems where the energy input is at the level of the individual microscopic entities. Examples include collections of self-propelled particles and the cellular cytoskeleton. In this talk, I will discuss two problems in active matter that illustrate the novel characteristics exhibited by this class of systems. In the first part, I will consider a one-dimensional model of active self-propelled particles, and present exact results for the density distribution of the particles. In the second part, I will discuss mechanochemical pattern formation in the actomyosin cytoskeleton. Finally, I will summarize ongoing work about how active mechanochemical patterns can lead to the emergence of morphogenetic patterns in cells and tissues.