

ICTS Special Colloquium

Title : Emergent behavior in self-organized dynamics: from consensus to hydrodynamic flocking

Speaker : Eitan Tadmor, University of Maryland, USA

Date : Thursday, January 18, 2018

Time : 4:00 PM

Venue : Madhava Lecture Hall, ICTS Campus, Bangalore

Abstract : A fascinating aspect in collective dynamics is self-organization: ants form colonies, birds flock, mobile networks coordinate a rendezvous and human crowds reach a consensus. We discuss the large-time, large-crowd behavior of different models for collective dynamics. The models are driven by different “rules of engagement”, which quantify how each member of the crowd interacts with its immediate neighbors.

We address two related questions.

- (i) How short-range interactions lead, over time, to the emergence of long-range patterns;
- (ii) How the flocking behavior of large crowds is captured by their hydrodynamic description.