ICTS Seminar

Title : Simulation of Indian Monsoon Climate: Can data-centric statistical models help?

Speaker : Adway Mitra, ICTS-TIFR, Bangalore

Date : Thursday, January 5, 2017

Time : 3:30 PM

Venue : Amal Raychaudhuri Room, ICTS Campus, Bangalore

Abstract : Many important aspects of Indian monsoonal rainfall vary greatly across years and within each year. Such aspects include the date of monsoon onset, total rainfall amount and its distribution across locations and across days. A realistic simulation of Indian monsoon climate should reproduce its statistical characterestics, including these variations.

Using available climatic data, advanced statistical techniques can identify different spatial and temporal patterns of these climatic variables, and their "anomalies". We will discuss Markov Random Field, where the data is considered as a graph with nodes representing spatio-temporal locations. At each "node", MRF considers an unobserved "state" variable - an abstraction of the climatic conditions there, which can be inferred from observations of climatic variables and using two fundamental properties: spatial and temporal coherence. We will see two applications of this technique: to detect annual rainfall anomalies at different locations and to identify active and break phases of monsoon.