

ICTS Colloquium

Title : Cosmological observables and the nature of dark matter

Speaker : Shiv Sethi, Raman Research Institute, Bangalore

Date : Monday, January 23, 2017

Time : 3:00 PM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : In the recent past, the cosmological model based on LambdaCDM model has proved to be a great success at large scales; the dynamics of the universe is adequately described by linear perturbation theory at these scales. However, this model might be at variance with cosmological observables at smaller scales. Also the lab and galactic searches for the dark matter particle have yet to reveal the nature of dark matter.

In my talk, after a brief review of the LambdaCDM model, four alternative dark matter models will be discussed: Late Forming Dark Model (LFDM), Warm Dark Matter (WDM), Ultra Light Axion (ULA), and Charged decaying particle (CHDM). These models are largely motivated by observations that suggest the standard model overestimates the matter power at small scales. I will discuss cosmological constraints on these models and also their observable consequences.