

ICTS Lecture Series

- Title : Superstring perturbation theory and its low energy expansion
- Speaker : Arnab Rudra, University of California, Davis, United States
- Date and Time : 18 August 2016 from 10.30 - 12.30 pm
17 & 19 August 2016 from 3.30 - 5.30 pm
- Venue : **Madhava Lecture Hall, ICTS Campus, Bangalore**
- Abstract : The goal of these lectures is to provide some basic ideas about the low-energy expansion of superstring theory. We will start from four tachyon amplitudes in bosonic string theory and will discuss its various features. Then we discuss tree level four graviton amplitude in IIB string theory. We will extract the first few terms in the low energy expansion. Then we will consider the action of S duality on these terms and its full non-perturbative understanding. After that we will consider the one loop amplitude. The new feature of loop amplitudes is the presence of non-analytic threshold terms - one needs to understand these terms in order to extract the analytic terms in the low energy expansion. If time permits, we will briefly discuss these issues in open string theory.