ICTS Seminar

Title   : N=1 Lagrangians for generalized Argyres-Douglas theories

Speaker   :   Prarit Agarwal, Seoul National University, South Korea

Date   : 20 & 21 September, 2017

Time   : 11:30 AM

Venue   : Nambu Discussion Room(Right), ICTS Campus, Bangalore

Abstract : Argyres-Douglas (AD) theories are 4d conformal field theories with N=2 supersymmetry. They were originally formulated as the low energy theory at certain special locii on the Coulomb branch of 4d N=2 theories, where particles with mutually non-local electromagnetic charges become massless simultaneously. It is widely believed that it impossible to write a Lorentz invariant Lagrangian that simultaneously describes electrons as well as monopoles/dyons as elementary excitations. Due to this a Lagrangian for AD theories was not known. I will present some recent work by my collaborators and me, wherein N=1 Lagrangians flowing to IR fixed points described by AD theories were obtained. As is obvious, these Lagrangians have accidental enhancement of supersymmetry in IR. An immediate application of our work was the computation of the full N=2 superconformal index of AD theories. A method to compute this was not available before our work.