ICTS Seminar

Title : Vortices, Orbifolds And Fukya Categories: My Journey In ICTS

Speaker : Saibal Ganguly, ICTS – TIFR, Bangalore

Date : Tuesday, July 23, 2019

Time : 11:00 AM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : This talk can be divided into three parts
[1] a work conceived and completed in ICTS.
[2] a short survey of two published papers during my tenure.
[3] my current interest and future research plan

Part 1 : Vortices are known as type of solitons in physics literature. The moduli of vortices on Kahler manifolds was characterized by Bradlow. Professor Dey and her collaborator s quantized the moduli on Riemann surface by Quillen Bundles. An attempt has been made to quantize Vortex moduli by Quillen bundle on Kahler surfaces. As a consequence we give another proof of projectivity of the smooth moduli for two dimensional projective complex manifolds without going to theory of Hilbert schemes and some interesting results.This is a joint work with Professor Dey.

Part2: A short survey will be made on two works published during my stay. We will give brief description of our published attempt to show Mckay Correspondence of Betti numbers of Chen Ruan cohomology on Quasitoric orbifolds which generalizes string theoretic Hodge number correspondence of Batyrev-Dias on projective toric orbifolds to a non-complex setting. A brief mention will also be made of our published attempt on providing contact structures on 3-dimensional cyclic orbifolds. Both the publications are single author publications.

Part3: A wrapped Fukya category is A-model ingredient of non compact homological mirror symmetry while a partially wrapped Fukya category is the mirror of removing a divisor. We talk about our plan of an attempt to represent partially wrapped Fukya category as a localization on a Lagrangian skeleton(possibly sigular) by quiver representations generalizing Dyckerhoff , Kapranov's work to higher dimensions. With this we also wish to enhance Konstevich's program of localizing Fukya category on a Lagrangian spine.