The Hong Kong University of Science and Technology

Department of Mathematics

Hong Kong Geometry Colloquium

Mirror symmetry for exceptional unimodular singularities

By

Prof. Yefeng Shen

Institute for the Physics and Mathematics of the Universe, Tokyo

Abstract

I would like to talk about mirror symmetry between the Saito-Givental theory of Arnold's 14 exceptional unimodular singularities (B-side) and Fan-Jarvis-Ruan-Witten theory of their mirror partners (A-side). On the B-side, we apply Li-Li-Saito's recent perturbative formula of primitive forms to compute the genus 0 generating function. This matches the Orbifold-Grothendieck-Riemann-Roch calculations in FJRW theory. Finally, we prove that the mirror symmetry holds for any genus by a reconstruction theorem. This is joint with Changzheng Li and Si Li.

Date : *Saturday, 5 October 2013*
Time : *10:00a.m.-11:00a.m.*
Venue : *Room 3401, Academic Building*
(near Lifts 17 & 18), HKUST

Categorification of Donaldson-Thomas invariants by perverse sheaves

By

Prof. Jun Li

Department of Mathematics, Stanford University

Abstract

Categorification of Donaldson-Thomas invariants is to construct a derived object so that the Euler number of its cohomology becomes the Donaldson-Thomas invariant of the underlying Calabi-Yau threefold. In this talk, I will report the joint work with Younghoon Kiem in constructing such a categorification. I will also discuss its potential application to Goparkumar-Vafa invariants and its possible generalization.

Date : *Saturday, 5 October 2013*
Time : *11:20a.m.-12:20a.m.*
Venue : *Room 3401, Academic Building*
(near Lifts 17 & 18), HKUST

All are welcome !

Light refreshment will be provided at Room 3493 from 11:00 am to 11:20 am