THE UNIVERSITY   **OF HONG KONG**

Institute of Mathematical Research
Department of Mathematics

Geometry Seminar

A mathematical theory of quantum curves

Professor Motohico Mulase
University of California, Davis

Abstract

Quantum curves are D-modules that conjecturally characterize certain knot polynomials, and should be obtained by quantizing the SL(2)-character variety of the fundamental group of a knot complement. Recently, a similar structure is discovered for the quantization of Hitchin's spectral curves for Higgs bundles on a projective curve in my joint papers with Olivia Dumitrescu. In place of the knot polynomials, we have a solution to certain Gromov-Witten type counting problems for the Hitchin case. The talk is aimed at a quick survey of motivations and recent mathematical developments on quantum curves.

Date: April 2, 2015 (Thursday)

Time: 4:00 – 5:00pm

Place: Room 210, Run Run Shaw Bldg., HKU

All are welcome