

गणित विभाग, आईआईटी मद्रास
DEPARTMENT OF MATHEMATICS, IIT-MADRAS


Special Seminar / विशेष संगोष्ठी

- Date / तारीख : Wednesday, the 14th October, 2015
- Time / समय : 3.00 p.m to 4.00 p.m
- Venue / स्थान : HSB 357 (Seminar Hall, 2nd Floor, Department of Mathematics)
- Speaker / वक्ता : Dr. Ritwik Mukherjee (TIFR, Mumbai)
- Title / शीर्षक : "Enumerative Geometry of Rational Cuspidal Curves on Del-Pezzo Surfaces"

Abstract:

Enumerative geometry is a branch of mathematics that deals with the following question: "How many geometric objects are there that satisfy certain constraints". The simplest example of such a question is "How many lines pass through 2 points". A more interesting question is "How many lines are there in 3 dimensional space that intersect 4 generic lines?". An extremely important class of enumerative question is to ask "How many rational (genus 0) degree d curves are there in $\mathbb{C}P^2$ that pass through $3d - 1$ generic points?" Although this question was investigated in the nineteenth century, a complete solution to this problem was unknown until the early 90's, when Kontsevich-Manin and Ruan-Tian announced a formula. In this talk we will discuss some natural generalizations of the above question; in particular we will be looking at rational curves on del-Pezzo surfaces that have a cuspidal singularity. We will describe a topological method to approach such questions. If time permits, we will also explain the idea of how to enumerate genus one curves with a fixed complex structure by comparing it with the Symplectic Invariant of a manifold (which are essentially the number of curves that are solutions to the perturbed \bar{d} equation).

"All are invited"


Dr. Sarang S. Sane
(Seminar In-charge)


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