

abstract

Members Seminar
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

Mirror symmetry is a deep conjectural relationship between complex and symplectic geometry. It was first noticed by string theorists. Mathematicians became interested in it when string theorists used it to predict counts of curves on the quintic three-fold (just as there are famously 27 lines on a cubic surface, there are 2875 lines on a quintic three-fold, 609250 conics, and so on). Kontsevich conjectured that mirror symmetry should reflect a deeper equivalence of categories: his celebrated 'Homological Mirror Symmetry' conjecture. Most of the talk will be an overview of mirror symmetry with a focus on the symplectic side, leading up to Kontsevich's conjecture. Finally I will describe a proof of Kontsevich's conjecture for the quintic three-fold, and more generally for a Calabi-Yau hypersurface in projective space of any dimension. If time permits I will draw lots of pictures in the one-dimensional case.