

Harvard-MIT Algebraic Geometry Seminar

Tropical curves, toric stacks, and enumerative geometry

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In 2005 Mikhalkin found an elegant solution to the enumerative problem of counting curves of a given genus on a toric surface. He used symplectic methods to reduce the problem to enumeration of combinatorial objects, called tropical curves, with certain multiplicities. Tropical count was extended to the case of rational curves in higher dimensions by Siebert and Nishinou using the techniques of log-geometry.

In this talk we will present an algebra-geometric point of view on tropical curves. We will use tropical curves and toric stacks to assign certain stacky limits to algebraic curves, and will discuss the problem of reconstruction of the curve from its stacky limit. In particular we will get another proof of the results of Mikhalkin, and Siebert-Nishinou, and will discuss other applications.

Tuesday February 19th
3:00 p.m.
Harvard Science Center
Room 507