Queen's Algebraic Geometry
— Seminar —

Computing Tropical Varieties

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Abstract

Tropical geometry is the geometry associated to the algebra of the real numbers with the operations of minimum and addition. Using this algebra, a "tropical variety" can be associated to any ideal in the Laurent polynomial ring over an algebraically closed field. Tropical varieties are polyhedral complexes, hence can be studied by combinatorial methods, yet they satisfy familiar rules of algebraic geometry such as Bezout's Theorem.

I will introduce the subject, briefly discuss applications to the theory of algebraic curves, dynamics, and celestial mechanics, and present results and examples from a joint paper with Anders Jensen, David Speyer, Bernd Sturmfels, and Rekha Thomas on computational aspects of tropical geometry.

Monday, September 24, 2007
4:30pm – 5:30pm
319 Jeffery Hall