

MATHEMATICS DEPARTMENT COLLOQUIUM, CSU
3–4 PM FRIDAY NOVEMBER 16, 2007
RHODES TOWER 1516

Tropical Elimination Theory

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Abstract. Tropical algebraic geometry emerged in recent years as a powerful tool to degenerate problems in algebraic geometry to questions in combinatorics (and vice versa). I will explain two examples of going back and forth. In one, joint with Bernd Sturmfels, we explain how to solve elimination and implicitization problems of computational algebraic geometry avoiding the hassle and boredom of Groebner bases. In another, joint with Sean Keel and Paul Hacking, we use combinatorics of root systems to compactify the moduli space of cubic surfaces in a modular sense, i.e. in such a way that points of the boundary correspond to certain degenerations of cubic surfaces that still carry their 27 lines that we all love since 1849.

Refreshments start at 2:30 PM in RT 1517.