Topology, Arithmetic, & Dynamics Seminar

Equations of tropical varieties

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Tropical geometry is a combinatorial shadow of algebraic geometry over a nonarchimedean field that encodes information about things like intersections and enumerative invariants. Usually one defines tropical varieties as certain polyhedral subsets of $\mathbb{R}^n$ satisfying a balancing condition. I'll show how these arise as the solution sets to certain systems of polynomial equations over the tropical semiring $\mathbb{T} = (\mathbb{R} \cup \{-\infty\}, max, +)$ related to matroids. This yields a notion of tropical Hilbert polynomials, and in this framework there is a universal tropicalization that is closely related to the Berkovich analytification and the moduli space of valuations.

Date: **Friday, April 10, 2015**
Time: **2:30-3:30pm**
Place: **4106 Exploratory Hall**

For special accommodations, please contact Sean Lawton via email at `slawton3@gmu.edu`.