Mathematics Graduate Seminar

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The dual Orlicz-Minkowski Problem

Abstract:

The classical Minkowski problem is a fundamental problem in convex geometry which asks: given a nonzero finite Borel measure μ, can μ be the surface area measure of a convex body *K*?

In this talk, I will present our recent results on the (general) dual Orlicz-Minkowski problems. These problems are dual to the Orlicz-Minkowski problems (extensions of the classical Minkowski problem involving nonhomogeneous functions). I will provide the definition of the dual Orlicz curvature measure and dual Orlicz quermassintegral. Then I will talk about a variational formula for the dual Orlicz quermassintegral in order to give a geometric intepretation of the dual Orlicz curvature measure. Based on the established variational formula, a solution to the dual Orlicz-Minkowski problem regarding the dual Orlicz curvature measure is provided. The generalized dual Orlicz-Minkowski problem will be discussed as well.