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The L_p Minkowski problem for log-concave functions

The study of the geometric theory for log-concave functions has received extensive attention recently. Such a theory can be viewed as the analytic lifting of the geometric theory of convex bodies (convex compact sets with nonempty interiors in \mathbb{R}^n).

In this talk, we will discuss how an L_p theory of log-concave functions can be developed which builds up a framework of the L_p theory of log-concave functions. In particular, we will explain the L_p Asplund sum of log-concave functions, discuss a variational formula which can be used to derive the L_p surface area measures for log-concave functions, talk about the related L_p Minkowski problems, and present our solutions to this problem.