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The dual Orlicz-Minkowski problems for log-concave functions

The dual curvature measure of convex bodies is a geometric measure induced by dual quermassintegrals of convex bodies and is a central concept of the dual Brunn-Minkowski theory. This measure was first introduced by Huang-LYZ. Related Minkowski problems have attracted a great deal of attention. In particular, the dual Minkowski problem can be reformulated as a Monge-Ampère equation involving radial functions of convex bodies. Recently, the dual Minkowski problem has been extended to the setting of unbounded convex sets, log-concave functions, and as well as the Orlicz theory.

In this talk, I will discuss the Orlicz moment and the related variational formula in terms of the Asplund sum of log-concave functions. I will talk about the related dual Orlicz curvature measure of log-concave functions and the corresponding Minkowski problem. A solution to this dual Minkowski problem will be presented for even data as well. This talk is based on the joint work with Niufa Fang, Deping Ye, and Yiming Zhao.