



THE DUAL MINKOWSKI PROBLEM FOR O-SYMMETRIC CONVEX BODIES

Yiming Zhao

Massachusetts Institute of Technology

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Abstract: The talk is going to focus on the set of all convex bodies (compact convex sets) in $\mathbb{R}^n$. This class of geometric objects is natural in the sense of Euclidean geometry as it is closed with respect to Hausdorff metric. Note that the boundaries of convex bodies need not to be smooth. The loss of smoothness means that quantities such as Gauss curvature are not well-defined and must be replaced by geometric measures to properly capture the shape information about a convex body. Recently, Huang-Lutwak-Yang-Zhang introduced the so-called *dual curvature measures* which is a family of such measures. The dual Minkowski problem asks for the necessary and sufficient conditions on a given measure μ so that it can be realized as the dual curvature measure of a convex body. Just like the classical Minkowski problem, the dual Minkowski problem reduces to Monge-Ampère type equation. However, in this talk, we shall solve the dual Minkowski problem for o -symmetric convex bodies directly for measures using variation of calculus. The solution is closely connected to a measure concentration condition.