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The L_p dual Minkowski problem for unbounded closed convex sets

The Brunn-Minkowski theory for bounded closed convex sets is the core in convex geometry, especially the study on the Minkowski problem. From the classical Minkowski problem to the recent L_p dual Minkowski problem, the past century has witnessed the great development on the Minkowski type problems. The significance of the Minkowski type problems can be revealed in other areas, for instance, differential geometry and PDEs. The unbounded closed convex sets have proved to be important in differential geometry, PDEs, singularity theory and commutative algebra. This triggers the study of the corresponding geometric theory for unbounded closed convex sets, with particular interest on the Minkowski type problems.

In this talk, I will talk about my recent work on the L_p dual Brunn-Minkowski theory for unbounded closed convex sets. In particular, I will explain the (p, q)-th dual curvature measure for unbounded closed convex sets, and present an existence and uniqueness of solution to such L_p dual Minkowski problem in the unbounded setting.