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The dual Minkowski problem for unbounded closed hypersurfaces

The classical Minkowski problem deals with the characterization of the surface area measure for convex bodies. This problem has been extensively studied in literature and has found fundamental applications in many areas, such as analysis, PDEs, etc. This problem has been extended to various settings, such as the dual Minkowski problem.

An important notion, in analysis, probability, differential geometry, algebraic geometry, singularity theory etc, is the unbounded convex hypersurface, which behaves quite different from its compact relative. Hence, understanding the geometric, algebraic, topological properties for unbounded convex hypersurfaces is in great demand. Among those important topics are the Minkowski type problems for unbounded convex hypersurfaces.

In this talk, I will present some recent progress on the Minkowski type problems for unbounded closed hypersurfaces with concentration on the dual Minkowski problem. I will talk about the setting of this problem and the existence of solutions to this problem.