Fixed Points of Mean Section Operators

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In this talk, we study regularizing properties of convolution transforms on the unit sphere. More precisely, we show that they are determined by the mass distribution of the Laplacian of the kernel near the poles. As an application, we characterize fixed points of Minkowski valuations in a smooth neighborhood of the unit ball. This extends previous results to a larger class of Minkowski valuations, including the mean section operators. Moreover, we refine an important representation theorem for homogeneous Minkowski valuations by proving that their generating functions are locally Lipschitz outside the poles. This is joint work with Leo Brauner.