GAIK AMBARTSOUMIAN, University of Texas at Arlington
Inversion and Symmetries of the Star Transform

The star transform is a generalized Radon transform mapping a function of two variables to its integrals along "star-shaped" trajectories, which consist of a finite number of rays emanating from a common vertex. Such operators appear in mathematical models of various imaging modalities based on scattering of elementary particles. The talk presents a comprehensive study of the inversion of the star transform. We describe the necessary and sufficient conditions for invertibility of the star transform, introduce a new inversion formula and discuss its stability properties.

This is a joint work with Mohammad Javad Latifi Jebelli (University of Arizona).