

The inverse problem for the geodesic X-ray transform on asymptotically conic spaces

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Abstract: In this talk I will explain recent results in joint work with Evangelie Zachos and Qiuye Jia on the geodesic X-ray transform on asymptotically conic spaces, asymptotic to the ‘large’ end of a cone, both on functions and on symmetric 2-tensors. This includes perturbations of Euclidean space and certain kinds of conjugate points are allowed. The key analytic tool, beyond the artificial boundary approach introduced by Uhlmann and the speaker, is the introduction of a new pseudodifferential operator algebra, the 1-cusp algebra, and its semiclassical version.