Meeting: 1003, Atlanta, Georgia, SS 4A, AMS-SIAM Special Session on Theoretical and Computational Aspects of Inverse Problems, I

1003-44-1080 **Karthik Ramaseshan*** (karthik@math.rochester.edu), Department of Mathematics, Hylan Building, University of Rochester, Rochester, NY 14627. *Geodesic X-ray transform on manifolds with conjugate points.*

Let M be a 2-dimensional Riemannian manifold on which the geodesic X-ray transform for compactly supported distributions is well defined:

$$\mathcal{R}f(\gamma) = \int_{\mathbb{R}} f(\gamma(t))dt$$

where γ is a geodesic on M. We study the microlocal properties of the associated normal operator $\mathcal{R}^t\mathcal{R}$ for metrics with conjugate points, with particular reference to the case of fold singularities for the Riemannian exponential map. (Received October 03, 2004)