

# The lens rigidity problem with partial data and the geodesic X-ray transform

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We sketch the proof of the result that for two dimensional non-trapping, compact Riemannian manifolds with boundary, knowledge of the scattering relation measured in open sets of the boundary determines the Riemannian metric up to an isometry that is the identity at the boundary if the corresponding geodesic X-ray transform of vector fields measured in the same open subsets of the boundary is injective up to the natural obstruction. This implies that two dimensional strongly geodesic minimizing manifolds are lens rigid.