**SPYROS ALEXAKIS**, University of Toronto
*Recovering a Riemannian metric from area data.*

We consider the following geometric inverse problem: Consider a simply connected Riemannian 3-manifold $(M, g)$ with boundary. Assume that given any closed loop $\gamma$ on the boundary, one knows the areas of the corresponding minimal surfaces with boundary $\gamma$. Then from this information can one reconstruct the metric $g$? We answer this in the affirmative in many cases, and relate it to a question that originally arose in the contect of the AdS-CFT correspondence. We will briefly discuss the relation of this problem with the question of reconstructing a metric from lengths of geodesics, and also with the Calderon problem of reconstructing a metric from the Dirichlet-to-Neumann operator for the corresponding Laplace-Beltrami operator. Joint with T. Balehowsky and A. Nachman.