IP/DIFFERENTIAL GEOMETRY/PDE SEMINAR

TUESDAY, MARCH 17, 2015
LOW 115
4–5PM

A Traveltime Inverse Problem in Spacetime

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We consider an inverse problem in a Lorentzian manifold (M, g). We show that the time measurements, which is the knowledge of the Lorentzian separation function on a submanifold Σ, determine the derivatives of the metric tensor. This result can be used to study the global determination of a spacetime if it either has a real-analytic structure or is stationary and satisfies the Einstein-scalar field equations. The presented results are Lorentzian counterparts of the extensively studied inverse problems in Riemannian geometry – determination of the jet of a metric and the boundary rigidity problem. This is a joint work with M. Lassas and L. Oksanen.

For more information about this seminar, visit the DG/PDE Seminar Web page (from the Math Department home page, `www.math.washington.edu`, follow the link **Seminars, Colloquia, and Conferences**).