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

1003-35-844 **Plamen Stefanov*** (stefanov@math.purdue.edu), Department of Mathematics, Purdue University, West Lafayette, IN 47907, and **Gunther Uhlmann**, Department of Mathematics, University of Washington, Seattle, WA 98195. *Stable determination of generic simple metrics from the hyperbolic DN map and boundary rigidity.*

Let g be a Riemannian metric on a bounded domain Ω. We call g simple, if there are no conjugate points in $\bar{\Omega}$, and if the boundary $\partial\Omega$ is strictly convex with respect to g. We show that generic simple metrics are uniquely determined by the boundary distance function, or the travel times through the domain, in a stable way. This implies Hölder stability for the inverse problem of recovering g from the hyperbolic DN map for such metrics. (Received September 30, 2004)