

# Boundary rigidity and the Dirichlet-to-Neumann map

Gunther Uhlmann  
University of Washington

In this lecture we will discuss some recent results on the boundary rigidity problem. The problem consists in determining a Riemannian metric on a compact manifold with boundary by knowing the distance function between boundary points. This problem arises also in geophysics in an attempt to determine the structure of the interior of the Earth by measuring the travel times of seismic waves going through the Earth.

We will also discuss a connection between boundary rigidity and the inverse boundary problem of determining a Riemannian metric from the Dirichlet-to-Neumann map associated to the Laplace-Beltrami operator.