

# The boundary rigidity problem in two dimensions

Leonid Pestov

Institute of Computational Mathematics and Mathematical Geophysics,  
Novosibirsk, Russia

November 17, 2003

The boundary rigidity problem consists in determining a Riemannian metric on a compact manifold with boundary by measuring the lengths of geodesics joining points on the boundary. This problem arose in Geophysics in attempting to determine the index of refraction of the Earth by measuring the travel times of seismic waves. In this talk we will outline a solution of this problem, which was obtained jointly with G. Uhlmann, in the two dimensional case.