

# Travel Time Tomography and Boundary Rigidity

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Travel Time Tomography, consists in determining the index of refraction or sound speed of a medium by measuring the travel times of waves going through the medium. In differential geometry this is known as the boundary rigidity problem. In this case the information is encoded in the boundary distance function which measures the lengths of geodesics joining points of the boundary of a compact Riemannian manifold with boundary. The inverse boundary problem consists in determining the Riemannian metric from the boundary distance function.

We will discuss some recent progress on this inverse problem.