



ON OPEN SCATTERING CHANNELS FOR MANIFOLDS WITH ENDS

R HEMPEL

Institut “Computational Mathematics”
Technische Universität Braunschweig
Pockelsstr. 14
D-38106 Braunschweig, Germany

We discuss the interaction of channels in geometric scattering theory where the dynamics is given by the Laplacian on a complete Riemannian manifold \mathcal{M} with a finite number of ends. We establish the following stability result: suppose the j -th scattering channel is *open* in the sense that waves coming in from infinity in this channel are not totally reflected; then the same property holds for small perturbations of the metric. The conditions on the size of the perturbation are expressed in terms of the harmonic radius $r(x)$ at a point $x \in \mathcal{M}$, as defined by Anderson and Cheeger. We present simple examples like rotationally symmetric manifolds and double coverings of the plane.

(Joint work with R. Weder (Mexico City) and O. Post (Berlin)).