

## LOCAL SMOOTHING FOR SCATTERING MANIFOLDS WITH HYPERBOLIC TRAPPED SETS

The Schroedinger propagator on a manifold preserves Sobolev spaces globally, but if we cut off in space and average in time, a local gain in regularity is possible. This was shown by Doi to be linked to a nontrapping condition on the manifold. A recent resolvent estimate of Nonnenmacher and Zworski in the presence of trapping has made new, although weaker, local smoothing results possible. We extend this resolvent estimate to the case of a scattering manifold using an 'annular' resolvent estimate of Cardoso and Vodev, together with a propagation of singularities result.