COMPACTNESS OF ISO-RESONANT POTENTIALS FOR
SCHRÖDINGER OPERATORS ON \( \mathbb{R}^d \)

PETER D. HISLOP

Abstract. In joint work with R. Wolf, we prove compactness of a restricted set of real-valued, compactly supported potentials \( V \) for which the corresponding Schrödinger operators \( H_V \) have the same resonances, including multiplicities. More specifically, let \( B_R(0) \) be the ball of radius \( R > 0 \) about the origin in \( \mathbb{R}^d \), for \( d = 1, 3 \). Let \( \mathcal{I}_R(V_0) \) be the set of real-valued potentials in \( C_0^\infty(\overline{B}_R(0); \mathbb{R}) \) so that the corresponding Schrödinger operators have the same resonances, including multiplicities, as \( H_{V_0} \). We prove that the set \( \mathcal{I}_R(V_0) \) is a compact subset of \( C_0^\infty(\overline{B}_R(0)) \) in the \( C^\infty \)-topology.