L^p boundedness of wave operators for two and three dimensional Schrödinger operators with point interactions

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abstract

We prove that wave operators for Schrödinger operators with multi-center local point interactions are bounded in $L^p(R^3)$ for $1 < p < 3$ and unbounded otherwise for arbitrary centres and strengths and, they are bounded in $L^p(R^2)$ for $1 < p < \infty$ if the location of centers and strengths satisfy a certain condition. The condition is empty for the single center case.