1116-35-678 **Michael Goldberg***, Department of Mathematical Sciences, University of Cincinnati, Cincinnati, OH 45221-0025, and **William Green**, Department of Mathematics, Rose-Hulman Institute of Technology, Terre Haute, IN 47803. *L^p Bounds for Wave Operators for the Schrödinger Equation with a Threshold Eigenvalue.*

The wave operators $W_\pm$ are a valuable tool for linking properties of the Schrödinger evolution $e^{itH}P_{ac}(H)$ to properties of the corresesopnding free evolution $e^{-it\Delta}$. We consider operators of the form $H = -\Delta + V(x)$ in $\mathbb{R}^n$, $n \geq 5$ which have an eigenvalue at zero. The potential is assumed to decay at the rate $|V(x)| \leq C(1+|x|)^{-(n+3+\varepsilon)}$.

It was recently proved by Yajima that the wave operators are bounded on $L^p(\mathbb{R}^n)$ for all $1 < p < \frac{n}{2}$. We recover this result, including the $p = 1$ endpoint, and show that the upper end of the range can be expanded if the eigenspace satisfies certain cancellation conditions: If $\int V\phi\, dx = 0$ for each eigenfunction ϕ, then L^p-bundedness of wave operators holds for $1 \leq p < n$. If the first moments of $V\phi$ also vanish for each eigenfunction, then L^p-boundedness of wave operators holds for $1 \leq p < \infty$. (Received September 10, 2015)