1077-35-64   **M Burak Erdoğan** and **William R Green*** (`wrgreen2@eiu.edu`), 600 Lincoln Ave., Charleston, IL 61920. *Dispersive estimates for Schrödinger operators in dimension two with obstructions at zero energy.*

Consider the Schrödinger operator $H = -\Delta + V$ on $\mathbb{R}^2$ and $P_{ac}(H)$ the projection onto the absolutely continuous spectrum of H. We prove $L^1(\mathbb{R}^2) \to L^\infty(\mathbb{R}^2)$ estimates for the evolution $e^{itH}P_{ac}(H)$ when there are obstructions, resonances and/or an eigenvalue of H at zero energy. In particular, we show that the existence of a mild resonance of H at zero energy does not destroy the t^{-1} decay rate. We also show that the existence of a more singular resonance or eigenvalue at zero energy destroys the decay rate, but does lead to a bounded evolution. (Received July 15, 2011)

1