1116-35-857 **Ebru Toprak*** (toprak2@illinois.edu), 1409 W. Green Street, Urbana, IL 61801. *A Weigthed estimate for two dimensional Schrödinger, matrix Schrödinger, and wave equations with resonance of the first kind at zero.* Preliminary report.

We study the two dimensional Schrödinger operator, $H = -\Delta + V$, in the weighted $L^1(\mathbb{R}^2) \to L^\infty(\mathbb{R}^2)$ setting when there is a resonance of the first kind at zero energy. In particular, we show that if $|V(x)| \lesssim \langle x\rangle^{-3-}$ and there is only s-wave resonance at zero of H, then

$$\big\|w^{-1}\big(e^{itH}P_{ac}f - \frac{1}{t}Ff\big)\big\|_\infty \leq \frac{C}{|t|(\log|t|)^2}\|wf\|_1, \quad |t| > 2,$$

with $w(x) = \log^2(2 + |x|)$. Here $Ff = c\psi\langle f, \psi\rangle$, where ψ is an s-wave resonance function. We also extend this result to matrix Schrödinger and wave equations with potentials under similar conditions. (Received September 14, 2015)