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WEIGHTED INEQUALITIES OF FEFFERMAN-STEIN TYPE FOR RIESZ-SCHRÖDINGER TRANSFORMS

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Abstract. In this work we are concerned with Fefferman-Stein type inequalities. More precisely, given an operator T and some p, $1 < p < \infty$, we look for operators M such that the inequality

$$\int |Tf|^p w \leq C \int |f|^p M w$$

holds true for any weight w. Specifically, we are interested in the case of T being any first or second order Riesz transform associated to the Schrödinger operator $L = -\Delta + V$, with V a non-negative function satisfying an appropriate reverse-Hölder condition. For the Riesz-Schrödinger transforms $\nabla L^{-1/2}$ and $\nabla^2 L^{-1}$ we make use of a result due to C. Pérez where this problem is solved for classical Calderón-Zygmund operators.