

On the weighted Fefferman–Stein and Coifman–Fefferman inequalities

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The Fefferman–Stein inequality connects the maximal and the sharp maximal operators, and the Coifman–Fefferman inequality provides a connection between Calderón–Zygmund operators and the maximal operator. It is still an open problem to characterize the weights w for which the $L^p(w) \rightarrow L^p(w)$ versions of these inequalities hold. In this talk, I will discuss a recent characterization of the $L^p(w) \rightarrow L^{p,\infty}(w)$ versions of these inequalities.