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Michael T Lacey* (lacey@math.gatech.edu), math, Georgia Tech, Atlanta, GA 30332. *Recent Results on Two Weight Inequalities for Singular Integrals*. Preliminary report.

The two weight problem for a given singular integral operator T asks for a characterization, if possible, for the norm inequality $\|T(f\sigma)\|_{L^p(w)} \leq C\|f\|_{L^p(\sigma)}$. Here, w, σ are two non-negative Borel measures. While a solution of this is not even known for the Hilbert transform, and for $p = 2$, there are results known that hold for rather degenerate pairs of measures. And these results have contributed to our understanding of these estimates of singular integral operators acting on $L^p(w)$, with $w \in A_p$. We will survey recent results on this topic. (Received December 08, 2010)