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Two-Weight Inequalities for Commutators with Calderón-Zygmund Operators.

In a foundational paper, Coifman, Rochberg and Weiss relate the norm of the commutator $[b, T]$, where T is a Calderón-Zygmund operator, with the BMO norm of b . In this talk we discuss a recent weighted version of this result. Specifically, we study the case when the commutator acts between two weighted Lebesgue spaces $L^p(\mathbb{R}^n; \mu)$ and $L^p(\mathbb{R}^n; \lambda)$, where μ and λ are Muckenhoupt A_p weights. A first result in this direction was obtained by Bloom in 1985, for the Hilbert transform. We discuss an extension of Bloom's result to all Calderón-Zygmund operators, using dyadic methods. (Received September 02, 2015)