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**James M Wilson\*** ([wilson@cems.uvm.edu](mailto:wilson@cems.uvm.edu)), Department of Mathematics, University of Vermont, Burlington, VT 05405. *Convergence and stability of the Calderón reproducing formula and wavelet-like expansions.*

The Calderón reproducing formula (CRF) is a familiar tool in harmonic analysis. The manner of its convergence is sometimes left a little vague. We show that, under very weak hypotheses, the CRF converges in  $L^p(w)$  ( $1 < p < \infty$ ) when  $w$  is an  $A_p$  weight. If time permits we will look at the related question of the stability of the CRF and “wavelet-like” expansions under small perturbations in the generating kernels. Both of these problems are handled via the “intrinsic” square function, which is a Littlewood-Paley analogue of the “grand” maximal function of Fefferman and Stein. (Received August 06, 2007)