James M Wilson* (wilson@cem.s.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)