1081-42-217 **James Michael Wilson*** (`jmwilson@uvm.edu`), 16 Colchester Avenue, Department of Mathematics, University of Vermont, Burlington, VT 05405. *Almost-orthogonality in weighted spaces.*

For $\alpha > 0$, let $\mathcal{C}_\alpha$ be the uniformly (norm ≤ 1) α-Hölder continuous functions with supports contained in the unit ball of $\mathbf{R}^d$. Let $\{\phi^{(Q)}\} \subset \mathcal{C}_\alpha$ be any family indexed over the dyadic cubes Q. If x_Q is the center of Q and $\ell(Q)$ is its sidelength, define

$$\phi_{z_Q}^{(Q)}(x) \equiv \phi^{(Q)}(2(x - x_Q)/\ell(Q)),$$

which is $\phi^{(Q)}$ translated and dilated (but not scaled) to the cube Q. We will show that if w is an A_∞ weight then the family $\{\phi_{z_Q}^{(Q)}/|Q|^{1/2}\}$ is almost-orthogonal in $L^2(dx)$ if and only if the family $\{\phi_{z_Q}^{(Q)}/w(Q)^{1/2}\}$ is almost-orthogonal in $L^2(w)$; where we say a family $\{\psi_k\}$ is almost-orthogonal in $L^2(\mu)$ if there is an $R < \infty$ such that, for all finite linear sums $\sum \lambda_k \psi_k$,

$$\int |\sum \lambda_k \psi_k|^2 \, d\mu \leq R \sum |\lambda_k|^2.$$

If time permits we will say something about how this relates to stability of almost-orthogonal expansions. (Received February 12, 2012)