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Veronika Furst* (furst_v@fortlewis.edu), Department of Mathematics, Fort Lewis College, 1000 Rim Drive, Durango, CO 81301. *Characteristic wavelet equations and generalizations of the spectral function.*

Two equations characterize orthonormal (and Parseval) wavelets in $L^2(\mathbb{R})$. Using a generalization of the spectral function of Bownik and Rzeszotnik, we present a new proof of these equations, in the case of semiorthogonal Parseval wavelets. We further generalize the spectral function in the setting of an abstract Hilbert space to present a compressed proof of the abstract characteristic equation. (Received August 19, 2007)