1125-41-2633 **Peter M Luthy*** (peter.luthy@mountsaintvincent.edu). *A structure theorem for the class of Parseval frame MRA wavelets for $L^2(\mathbb{R})$.*

A classical theorem attributed to Naimark states that Parseval frames are, more or less, orthogonal projections of orthonormal bases. More precisely, given a Parseval frame $\mathcal{B}$ in a Hilbert space H, one can embed H in a larger Hilbert space K so that the image of $\mathcal{B}$ is the orthogonal projection of an orthonormal basis for K. While this is a nice way to think about Parseval frames, the space K could be rather abstract. In this talk, we will discuss Parseval frame MRA wavelets for $L^2(\mathbb{R})$ and see that a certain analogue of Naimark's theorem holds: the scaling functions for Parseval frame MRA wavelets are the orthogonal projections of "much nicer" such scaling functions. For the class of semiorthogonal Parseval frame MRAs, the "much nicer" scaling functions are simply scaling functions for orthonormal MRA wavelets. One major advantage that this analogue of Naimark's theorem has is that one never needs to leave $L^2(\mathbb{R})$. (Received September 20, 2016)