1027-46-231 **Judith A. Packer*** (packer@euclid.colorado.edu), Department of Mathematics, University of Colorado at Boulder, Campus Box 395, Boulder, CO 80309-0395. *Generalized-low pass filters and the resulting isometries.* Preliminary report.

I discuss some recent work, done in collaboration with L. Baggett, N. Larsen, K. Merrill, and I. Raeburn, which, under appropriate conditions, allows us to construct a generalized multi-resolution analysis ("GMRA") in the sense of Baggett, H. Medina, and Merrill corresponding to any bounded multiplicity function satisfying the consistency equation that is non-zero in a neighborhood of $1 \in \mathbb{T}$. Using K. Merrill's new definition for generalized-low pass condition for a family of filters, we have been able to construct a family of "low-pass" filter functions. These are then used to construct an isometry, which can in turn used to construct the GMRA using the direct limit methods pioneered by Larsen and Raeburn. (Received February 27, 2007)