1067-42-1165 **Judith A. Packer*** (packer@colorado.edu), Department of Mathematics, CB 395, University of Colorado at Boulder, Boulder, CO 80309-0395. *Tensor products of generalized multiresolution analyses.* Preliminary report.

Consider a generalized multiresolution analysis (GMRA) $(\{V_j\},\ \pi, \delta)$ for a discrete abelian group and non-surjective automorphism pair (Γ, α), where $\alpha(\Gamma)$ has finite index in Γ and $\cap_{n=0}^{\infty}(\alpha^n(\Gamma)) = \{0_\Gamma\}$. Here the V_j are nested subspaces of the Hilbert space $\mathcal{H}$ satisfying the standard intersection and density conditions, π is a representation of Γ on $\mathcal{H}$ with invariant subspace V_0, δ is a unitary dilation on $\mathcal{H}$, with $\delta^1 \circ \pi_\gamma \circ \delta \ = \ \pi_{\alpha(\gamma)}$. We discuss a recent construction of L. Baggett, V. Furst, K. Merrill, and the author, where we are given a system $(\{V_j'\}, \pi', \delta)$ for a different discrete abelian group/automorphism pair (Γ', α'), where we do not necessarily insist $\cap_{j\in\mathbb{Z}} V_j' = \{\mathbf{0}\}$. We analyze some interesting examples and natural questions that arise when one constructs the Cartesian product $(\Gamma \times \Gamma', \alpha \times \alpha')$ and the corresponding triple $(\{V_j \otimes V_j'\}, \pi \otimes \pi',\ \delta \otimes \delta')$ in $\mathcal{H} \otimes \mathcal{H}'$. (Received September 19, 2010)