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Judith A Packer* (packer@colorado.edu), Department of Mathematics, CB 395, University of Colorado, Boulder, CO 80305. *Classification of filter systems giving rise to generalized multiresolution analyses*. Preliminary report.

We discuss how generalized multiresolution analyses (GMRA) corresponding to a discrete abelian translation group Γ and a dilation operator δ defined on abstract Hilbert spaces can be described by their multiplicity functions m defined on $\widehat{\Gamma}$ and matrix-valued filter functions H defined on appropriately chosen set related to m and $\widehat{\Gamma}$. A construction procedure is described that produces an abstract GMRA from any functions m and H meeting required conditions. An equivalence relation is defined on different filter systems H associated to the same multiplicity function m . We also discuss the isometry S_H associated to the filter system H , a construction with its origins in the work of Bratteli and Jorgensen, and give necessary and sufficient conditions for this isometry to be pure. A few examples of frames related to these constructions will be given.

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