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Veronika Furst* (furst_v@fortlewis.edu), Department of Mathematics, Fort Lewis College, 1000 Rim Drive, Durango, CO 81301. *The trivial intersection property of generalized multiresolution analyses.*

The “problem” of Baggett, Bownik, and Rzeszotnik states that if $\{\psi_k\}$ is a Parseval multiwavelet in $L^2(\mathbb{R}^d)$, i.e., if the functions $\{\psi_{j,n,k}(x)\} \equiv \{2^{j/2}\psi_k(2^jx + n)\}$ form a normalized tight frame for $L^2(\mathbb{R}^d)$, then the collection of sets $V_j = \overline{\text{span}}\{\psi_{l,n,k} : l < j\}$ satisfy all of the properties of a GMRA except possibly the condition $\cap V_j = \{0\}$. In this talk, we will briefly discuss the history of this problem and a recent result that presents two new conditions equivalent to the trivial intersection property. In doing so, we extend a result of Bownik and Rzeszotnik from $L^2(\mathbb{R}^d)$ to an abstract Hilbert space. This is joint work with L.W. Baggett, K.D. Merrill, and J.A. Packer. (Received February 01, 2009)