

1056-46-88

Robert G. Fraser* (rgf11@cwru.edu), **Andrew Dugowson** and **Yeonhyang Kim**.

Modulation Frames and Infinite Symmetric Matrices.

Let H be a separable Hilbert space. A set $\{f : k \in \mathbb{Z}\} \subset H$ is a frame for H if there exist constants $A, B > 0$ such that for all $f \in H$,

$$A\|f\|_H^2 \leq \sum_{k \in \mathbb{Z}} |\langle f, f_k \rangle|^2 \leq B\|f\|_H^2.$$

In this paper, we introduce modulation frames, which consist of modulates of functions in $L_2(\mathbb{R})$. We characterize these frames using infinite symmetric matrices. These matrices can be used to generalize the relationship between Weyl-Heisenberg frames and infinite quadratic forms. (Received July 24, 2009)