

Fibers as a tool to analyze frame properties on systems of translates

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In this talk we will see how to analyze frame properties on systems of translates using fiberization techniques. We will first discuss the concept of fibers in $L^2(\mathbb{R}^d)$ and its relationship with systems of the form $\{T_k\phi : k \in \mathbb{Z}^d, \phi \in \mathcal{A}\}$ where \mathcal{A} is a set of functions of $L^2(\mathbb{R}^d)$ and T_k is the shift operator by k . We will then see how this notion can be defined in more general context than $L^2(\mathbb{R}^d)$. Mainly, we will work with fibers designed to deal with systems in Hilbert spaces generated by the action of a discrete group. We will provide several examples to illustrate the theory.