Gabor Analysis on Discrete Periodic Sets

Yun-Zhang Li

Beijing University of Technology, China
yzlee@bjut.edu.cn

Let $N \in \mathbb{N}$. A nonempty subset $S$ of $\mathbb{Z}$ is said to be $N\mathbb{Z}$-periodic if $j + nN \in S$ for $j \in S$ and $n \in \mathbb{Z}$. For such $S$, we denote by $I^2(S)$ the closed subspace of $l^2(\mathbb{Z})$:

$$I^2(S) := \{ f \in l^2(\mathbb{Z}) : f(j) = 0 \text{ for } j \notin S \}.$$  

This talk addresses Gabor analysis in $I^2(S)$. Completeness, frame characterization, Gabor duals of Gabor systems, and super Gabor frames will be discussed.