



Department of Mathematics and Computer Science
@ St.Petersburg State University

COLLOQUIUM

Thursday, March 4, 17:15, Zoom channel 958-115-833



Yuri Belov (M&CS SPbU)
Gabor frames in $L^2(\mathbb{R})$

Let g be a function from $L^2(\mathbb{R})$. We will study the expansion of an arbitrary function $f \in L^2(\mathbb{R})$ via linear combinations of systems of time-frequency shifts of g , $\mathfrak{G} = \{e^{2\pi i y t} g(t - x)\}_{(x,y) \in \Lambda}$ and a similar problem of reconstruction of f from the sequence of inner products (f, g) , $g \in \mathfrak{G}$. For stable reconstruction we need the frame property of system \mathfrak{G} . Even in the lattice case $\Lambda = \alpha\mathbb{Z} \times \beta\mathbb{Z}$ there is only a few functions g for which we know the complete answer (Gaussian, hyperbolic secant, one-sided exponential). We consider classical results of K. Seip, A. Janssen and R. Grochenig and the recent progress for rational g by Yu. Lyubarskii, A. Kulikov and the author.

Everyone is welcome!