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Dual pairs of Gabor frames generated by trigonometric functions without the partition of unity property

Abstract

Frames give rise to series expansions in Hilbert spaces similar to orthonormal bases - yet under less restrictive circumstances. For the reconstruction of an element by a frame there is, besides the frame itself, also need for a so called dual frame. In the talk the focus will lie on explicit constructions of Gabor frames and their dual in $L^2(\mathbb{R})$. Both the Gabor frame and its dual are constructed out of so called generators. Given a generator, it is in general not clear how to explicitly write the dual generator. If the generator of a Gabor frame has the partition of unity property, then a simple way of constructing the dual generator can be given. However, this condition is quite restrictive. In the talk trigonometric generators not satisfying the partition of unity constraint are presented, yet it is shown that the same simple way of constructing the dual can be applied.

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