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Pseudoframes for subspaces with applications. (English) Zbl 1058.42024
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Given a subspace X of a Hilbert space H, a Bessel sequence $\{x_n\}$ is said to be a pseudoframe for X w.r.t. a Bessel sequence $\{x_n^*\}$ if $f = \sum\langle f, x_n^*\rangle x_n$ holds for all $f \in X$. Pseudoframe decompositions are more general than classical frame decompositions: $\{x_n\}$ do not necessarily belong to X and might not be a frame. In the paper, pseudoframes are characterized in terms of operators, and the issue of finding duals is discussed in detail. Pseudoframes are considered in shift-invariant spaces, and applications to signal restoration and noise reduction are sketched.

Reviewer: Ole Christensen (Lyngby)

MSC:

42C15	General harmonic expansions, frames	Cited in **1** Review
42C40	Nontrigonometric harmonic analysis involving wavelets and other special systems	Cited in **95** Documents

Keywords:

pseudoframes; frames; series expansion

Full Text: DOI

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