

m -Refinably Extendable Functions

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Abstract

A function is 2-refinable if it can be written as a linear combination of its two dilates and integer translates. Let $f : [0, N) \rightarrow \mathbb{R}$ and $\{c_i\}_{i=0}^N \subset \mathbb{R}$ so that $c_0, c_N \neq 0$ then it is possible to construct a function $\tilde{f} : \mathbb{R} \rightarrow \mathbb{R}$ such that $\tilde{f}|_{[0, N]} = f$ and \tilde{f} is refinable with refinement sequence $\{c_i\}_{i=0}^N$.