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Frame decomposition of principal shift-invariant spaces with rational dilations.

This talk describes a means for the construction of stable filtering schemes with rational dilations through the theory of shift-invariant spaces. In particular, frame wavelet decompositions of principal shift-invariant spaces will be achieved even when the associated scaling function is not refinable. Moreover, such decompositions give rise to stable filtering schemes with finitely supported filters, reminiscent of those studied by Kovacevic and Vetterli.