

# Interpolation Mappings on Two-Interval Wavelet Sets

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## Abstract

A measurable set is defined to be a wavelet set if it is the support set of a characteristic function whose inverse Fourier transform is a wavelet. It has been shown that in  $\mathbb{R}$  wavelet sets are exactly those sets of measure  $2\pi$  which tile  $\mathbb{R}$  by 2-dilation and by translation by integer multiples of  $2\pi$  (modulo null sets). Between any two of these wavelet sets there exists an interpolation mapping consisting of translations by integer multiples of  $2\pi$ . In the case where this mapping is involutive, the pair of wavelet sets is an interpolation pair. Interpolation pairs of two interval wavelet sets will be completely categorized and conditions will be presented under which repeated composition of the map yields the identity operator.