

"The Cross-Over and Patch Algorithms for Wavelet Sets in \mathbb{R}^2 "

by

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Abstract: We have two algorithms to generate classes of wavelet sets in \mathbb{R}^2 : The crossover algorithm and the patch algorithm.

Using any partition of the inner square, $[-\frac{\pi}{2}, \frac{\pi}{2}] \times [-\frac{\pi}{2}, \frac{\pi}{2}]$, into four pieces $X_{\oplus}, X_{\ominus}, Y_{\oplus}, Y_{\ominus} \subseteq [-\frac{\pi}{2}, \frac{\pi}{2}] \times [-\frac{\pi}{2}, \frac{\pi}{2}]$ such that X_{\oplus} is in the right half-inner square, X_{\ominus} is in the left half-inner square, Y_{\oplus} is in the upper half-inner square and Y_{\ominus} is in the lower half-inner square, our crossover algorithm generates a wavelet set in \mathbb{R}^2 . We have results for the patch wavelet model as well.