

Kempner Colloquium

SIMPLE WAVELET SETS IN \mathbb{R}^2

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A wavelet set in \mathbb{R}^2 can be defined analytically as a set whose characteristic function is the Fourier transform of a wavelet. Alternatively, it can be defined geometrically as a set that tiles the plane under both translation by the integer lattice and dilation by an expansive integer matrix. In both contexts, it is somewhat surprising that such sets exist. However, for some dilations, such sets can be found that are geometrically quite simple, consisting of finite unions of polygons. This talk will present new results about which matrix dilations have such simple wavelet sets.

November 14, 2011

4:00 p.m.

MATH 350