

5005-C1-45

Jonas D'Andrea* (dandrea@colorado.edu), University of Colorado, Boulder, Department of Mathematics, Campus Box 395, Boulder, CO 80309-0395. *Fractal wavelets of Dutkay-Jorgensen type for the Sierpinski gasket space.*

Several years ago, D. Dutkay and P. Jorgensen developed the concept of wavelets defined on a σ -finite fractal measure space, developed from an iterated affine system. They worked out in detail the wavelet and filter functions corresponding to the ordinary Cantor fractal subset of \mathbb{R} . In this talk we examine the construction of Dutkay and Jorgensen as applied to the fractal measure space corresponding to the Sierpinski gasket fractal. We develop a variety of high-pass filters, and as an application use the various families of wavelets to analyze digital images. Joint work with Kathy Merrill and Judith Packer. (Received June 05, 2007)