

1077-28-1181

**Kate E. Ellis** (kellis1@csustan.edu), **Michel L. Lapidus** (lapidus@math.ucr.edu), **Michael C. Mackenzie** (michael.mackenzie@uconn.edu) and **John A. Rock\*** (jarock@csupomona.edu), Department of Mathematics and Statistics, Cal Poly Pomona, 3801 W Temple Ave, Pomona, CA 91768. *Multifractal spectra of certain self-similar measures as abscissa of convergence functions.*

The construction of a self-similar measure supported in the unit interval yields a multifractal decomposition of the support when the measure is not the natural mass distribution of a self-similar set. Such a decomposition comprises a collection of disjoint sets whose Hausdorff dimensions form a continuum known as a multifractal spectrum. In this talk, a technique that follows along the lines of a classic result of A. S. Besicovitch and S. J. Taylor (stated in modern terminology due to M. L. Lapidus) will be shown to recover the multifractal spectrum of a certain type of self-similar measure as the concave envelope of the abscissa of convergence function associated with the corresponding family of partition zeta functions. These and related results are established in the paper Partition zeta functions, multifractal spectra, and tapestries of complex dimensions by K. E. Ellis, M. L. Lapidus, M. C. Mackenzie, and J. A. Rock. This paper will appear in the Mandelbrot Memorial Volume to be published by World Scientific. (Received September 17, 2011)