



Analysis on Fractals

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In this talk I will give an overview of analysis on a class of fractals that include the Sierpinski gasket. The starting point of the theory is the introduction by J. Kigami of a Laplacian operator on these fractals. After reviewing the construction of this fractal Laplacian, I will survey some of the properties of its spectrum. In particular, I will focus on the existence of localized eigenfunctions for this Laplacian. Such eigenfunctions are supported on small sets and the corresponding eigenvalues have high multiplicity. I will conclude by illustrating some consequences of the existence of such localized eigenfunctions.

Biography

Kasso Okoudjou was born in Benin and graduated from the National University of Benin in 1996 majoring in Mathematics. He completed his Ph.D. in mathematics at Georgia Tech in 2003 working under the supervision of Chris Heil. From 2003 to 2006 he was H.C. Wang Assistant Professor of Mathematics at Cornell University. In 2006 he moved to the University of Maryland College Park, where he is now Associate Professor. From 2010 to 2012 he was a Senior Humboldt Researcher visiting the University of Osnabruck, and the Technical University of Berlin. His research interests include applied and pure harmonic analysis especially time-frequency and time-scale analysis, frame theory, and analysis and differential equations on fractals.