Robert S. Strichartz

Publication List  (updated 3/16)

(All papers available on request, by number. Asterisk (*) indicates works not in final form.)

Research Papers


[R98] (with Kevin Coletta and Kealey Dias) *Numerical analysis on the Sierpinski gasket, with applications to Schrödinger equation, wave equation and Gibbs’ phenomenon*, Fractals 12 (2004), 413–449.


(with Anna Blasiak and Baris Evren Ugurcan) Spectra of self-similar Laplacians on the Sierpinski gasket with twists, Fractals, 16 (2008), 43–68.

(with Mihai Cucuringu) Infinitesimal resistance metrics on Sierpinski gasket type fractals, Analysis, 28 (2008), 319–331.


(with Edward Fan and Zuhair Khandker) Harmonic oscillators on infinite Sierpinski gaskets, Communications in Mathematical Physics, 287 (2009), 351–382.

(with Adam Allan and Michael Barany) Spectral operators on the Sierpinski gasket I, Complex Variables and Elliptic Equations, 54 (2009), 521–543.

A fractal quantum mechanical model with Coulomb potential, Communications on Pure and Applied Analysis, 8 (2009), 743–755.


(with Huo-Jun Ruan) Covering maps and periodic functions on higher dimensional Sierpinski gaskets, Canadian Journal of Mathematics, 61 (2009), 1151–1181.


(with Shu Tong Tse) Local behavior of smooth functions for the energy Laplacian on the Sierpinski gasket, Analysis, 30 (2010), 285–299.

(with Steven M. Heilman) Homotopies of eigenfunctions and the spectrum of the Laplacian on the Sierpinski carpet, Fractals, 18 (2010), 1–34.


[R131] (with Sarah Constantine and Miles Wheeler) *Analysis of the Laplacian and spectral operators on the Vicsek set*, Communications on Pure and Applied Analysis, 10 (2010), 1–44.


[R136] (with Justin Owen) *Boundary value problems for harmonic functions on a domain in the Sierpinski gasket*, Indiana University Mathematics Journal, 61 (2012), 319–335


[R155*] (with Jonathan Fox) *Unexpected spectral asymptotics for wave equations on certain compact spacetimes*, Journal d’Analyse Mathematiques, to appear.

[R156*] *“Graph paper” trace characterizations of functions of finite energy*, Journal d’Analyse Mathematique, to appear.


[R159*] (with Timothy Murray), *Spectral asymptotics of the Laplacian on surfaces of constant curvature*, submitted for publication.

[R160*] (with Samantha Fairchild, Ilse Haim, Rafael G. Setra and Travis Westuru) *The abelian sandpile model on fractal graphs*, submitted for publication.
Expository Publications


Unpublished Educational Materials

[U1] The bouncing ball — an exercise in mathematical modeling

Books


Web Sites

(created by students working under my supervision)


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Bounded mean oscillation: R26, R28
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