

Robert S. Strichartz

Publication List (updated 10/09)

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

Research Papers

- [R1] *Isometric isomorphisms of measure algebras*, Pacific Journal of Mathematics, 15 (1965), 315–317.
- [R2] *Isomorphisms of group algebras*, Proceedings of the American Mathematical Society, 17 (1966), 858–862.
- [R3] *Multipliers on fractional Sobolev spaces*, Journal of Mathematics and Mechanics, 16 (1967), 1031–1060.
- [R4] *Sobolev inequalities and extension theorems for functions with certain  $L^p$ -derivatives*, Studia Mathematica, 30 (1968), 1–15.
- [R5] *Fubini-type theorems*, Annali della Scuola Normale Superiore di Pisa Classe di Scienze, XXII (1968), 399–408.
- [R6]  *$L^p$  estimates for integral transforms*, Transactions of the American Mathematical Society, 136 (1969), 33–50.
- [R7] *A multilinear version of the Marcinkiewicz interpolation theorem*, Proceedings of the American Mathematical Society, 21 (1969), 441–444.
- [R8] *Convolutions with kernels having singularities on a sphere*, Transactions of the American Mathematical Society, 148 (1970), 461–471.
- [R9] *A priori estimates for the wave equation and some applications*, Journal of Functional Analysis, 5 (1970), 218–235.
- [R10] *The stationary observer problem for  $\square u = Mu$  and related equations*, Journal of Differential Equations, 9 (1971), 205–223.
- [R11] *A note on Sobolev algebras*, Proceedings of the American Mathematical Society, 29 (1971), 205–207.
- [R12] *Invariant pseudo-differential operators on a Lie group*, Annali della Scuola Normale Superiore di Pisa, 26 (1972), 587–611.
- [R13] *Multipliers for spherical harmonic expansions*, Transactions of the American Mathematical Society, 167 (1972), 115–124.
- [R14] *A functional calculus for elliptic pseudo-differential operators*, American Journal of Mathematics, 94 (1972), 711–722.
- [R15] *The Hardy space  $H^1$  on manifolds and submanifolds*, Canadian Journal of Mathematics, 24 (1972), 915–925.
- [R16] *A note on Trudinger's extension of Sobolev's inequalities*, Indiana University Mathematical Journal, 21 (1972), 841–842.
- [R17] *Boundary values of solutions of elliptic equations satisfying  $H^p$  conditions*, Transactions of the American Mathematical Society, 176 (1973), 445–462.
- [R18] a. *Harmonic analysis on hyperboloids*, Journal of Functional Analysis, 12 (1973), 341–383.  
b. (Informal summary of the above) *A non-compact analogue of spherical harmonics*, Proceedings of Symposia in Pure Mathematics, vol. 26, American Mathematical Society, Providence, 1973, 357–358.

- [R19] *Multiplier transformation on compact Lie groups and algebras*, Transactions of the American Mathematical Society, 193 (1974), 99–110.
- [R20] *Fourier transforms and non-compact rotation groups*, Indiana University Mathematical Journal, 24 (1974), 499–526. Errata 30 (1981), 479–480.
- [R21] *The explicit Fourier decomposition of  $L^2(SO(n)/SO(n - m))$* , Canadian Journal of Mathematics, 27 (1975), 294–310.
- [R22] *Singular integrals on nilpotent Lie groups*, Proceedings of American Mathematical Society, 53 (1975), 367–374.
- [R23] *Bochner identities for Fourier transforms*, Transactions of the American Mathematical Society, 228 (1977), 307–327.
- [R24] *Restrictions of Fourier transforms to quadratic surfaces and decay of solutions of wave equations*, Duke Journal of Mathematics, 44 (1977), 705–714.
- [R25] *Minimum energy solutions of certain underdetermined problems in partial differential equations*, Journal of Differential Equations, 27 (1978), 64–91.
- [R26] *Bounded mean oscillation and Sobolev spaces*, Indiana University Mathematics Journal, 29 (1980), 539–558.
- [R27] *Asymptotic behavior of waves*, Journal of Functional Analysis, 40 (1981), 341–357.
- [R28] *Traces of BMO–Sobolev spaces*, Proceedings American Mathematical Society, 83 (1981), 509–513.
- [R29]  *$L^p$  estimates for Radon transforms in Euclidean and non-Euclidean spaces*, Duke Mathematical Journal, 48 (1981), 699–727.
- [R30] *Explicit solutions of Maxwell’s equations on a space of constant curvature*, Journal of Functional Analysis, 46 (1982), 58–87.
- [R31] *A Poisson summation formula for integrals over quadratic surfaces*, Transactions American Mathematical Society, 270 (1982), 163–173.
- [R32] *Singular integrals supported on submanifolds*, Studia Mathematica, 74 (1982), 137–151.
- [R33] *Compositions of singular integral operators*, Journal of Functional Analysis, 49 (1982), 91–127.
- [R34] *Improved Sobolev inequalities*, Transactions American Mathematical Society, 279 (1983), 397–409.
- [R35] *Analysis of the Laplacian on a complete Riemannian manifold*, Journal of Functional Analysis, 52 (1983), 48–79.
- [R36] *Mean value properties of the Laplacian via spectral theory*, Transactions American Mathematical Society, 284 (1984), 219–228.
- [R37]  *$L^p$  contractive projections and the heat semi-group for differential forms*, Journal of Functional Analysis, 65 (1985), 348–357.
- [R38] *Harmonic analysis on Grassmannian bundles*, Transactions American Mathematical Society, 296 (1986), 387–409.
- [R39] *Sub-Riemannian geometry*, Journal of Differential Geometry, 24 (1986), 221–263. Errata 30 (1989), 545–596.
- [R40] *The Campbell–Baker–Hausdorff Dynkin formula and solutions of differential equations*, Journal of Functional Analysis, 72 (1987), 320–345.
- [R41] *Linear algebra of curvature tensors and their covariant derivatives*, Canadian Journal of Mathematics, 40 (1988), 1105–1143.
- [R42] *Local harmonic analysis on spheres*, Journal of Functional Analysis, 77 (1988), 403–433.

- [R43] *Uncertainty principles in harmonic analysis*, Journal of Functional Analysis, 84 (1989), 97–114.
- [R44] *Harmonic analysis as spectral theory of Laplacians*, Journal of Functional Analysis, 87 (1989), 51–148. Errata 109 (1992), 457–460.
- [R45] *Magnified curves on a flat torus, determination of almost periodic functions, and the Riemann–Lebesgue Lemma*, Proceedings of the American Mathematical Society, 107 (1989), 755–759.
- [R46a] *Fourier asymptotics of fractal measures*, Journal of Functional Analysis, 89 (1990), 154–187.
- [R46b] *Besicovitch meets Wiener — Fourier expansions and fractal measures*, Bulletin of the American Mathematical Society, 20 (1989), 55–59.
- [R47]  *$H^p$  Sobolev spaces*, Colloquium Mathematician, 60/61 (1990), 129–139.
- [R48] *Harmonic analysis on constant curvature surfaces with point singularities*, Journal of Functional Analysis, 91 (1990), 37–116.
- [R49] *Self-similar measures and their Fourier transforms I*, Indiana University Mathematics Journal, 39 (1990), 797–817.
- [R50]  *$L^p$  harmonic analysis and Radon transforms on the Heisenberg group*, Journal of Functional Analysis, 96 (1991), 350–406.
- [R51] *Spectral asymptotics of fractal measures on Riemannian manifolds*, Journal of Functional Analysis, 102 (1991), 176–205.
- [R52] *Wavelet expansions of fractal measures*, Journal of Geometric Analysis, 1 (1991), 269–289.
- [R53] *Self-similarity on nilpotent Lie groups*, Contemporary Mathematics, 140 (1992), 123–157.
- [R54] (with Prem Janardhan and David Rosenblum) *Numerical experiments in Fourier asymptotics of Cantor measures and wavelets*, Experimental Mathematics, 1 (1992), 249–273.
- [R55] *Self-similar measures and their Fourier transforms II*, Transactions of the American Mathematical Society, 336 (1993), 335–361.
- [R56] *Self-similar measures and their Fourier transforms III*, Indiana University Mathematics Journal, 42 (1993), 367–411.
- [R57] *Wavelets and self-affine tilings*, Constructive Approximation, 9 (1993), 327–346.
- [R58] *Complementary series and exotic Sobolev norms*, Journal of Functional Analysis, 114 (1993), 493–508.
- [R59] *Characterization of eigenfunctions of the Laplacian by boundedness conditions*, Transactions of the American Mathematical Society, 338 (1993), 971–979.
- [R60] *A fractal Radon inversion problem*, Journal d’Analyse Mathématique, 64 (1994), 219–240.
- [R61] (with Arthur Taylor and Tong Zhang) *Densities of self-similar measures on the line*, Experimental Mathematics, 4 (1995), 101–128.
- [R62] *Estimates for sums of eigenvalues for domains in homogeneous spaces*, Journal of Functional Analysis, 137 (1996), 152–190.
- [R63] (with Ron Dror and Suman Ganguli) *A search for best constants in the Hardy–Littlewood maximal theorem*, Journal of Fourier Analysis and Applications 2 (1996), 473–486.
- [R64] (with David Glickenstein) *Nonlinear self-similar measures and their Fourier transforms*, Indiana University Mathematics Journal 45 (1996), 205–220.

- [R65] *Piecewise linear wavelets on Sierpinski gasket type fractals*, Journal of Fourier Analysis and Applications, 3 (1997), 387–416.
- [R66] *Fractals in the large*, Canadian Journal of Mathematics, 50 (1998), 638–657.
- [R67] (with John–Peter Lund and Jade P. Vinson) *Cauchy transforms of self–similar measures*, Experimental Mathematics, 7 (1998), 177–190.
- [R68] *Remarks on “Dense analytic subspaces in fractal  $L^2$ –spaces” by P. E. T. Jorgensen and S. Pedersen*, Journal d’Analyse Mathématique 75 (1998), 229–231.
- [R69] (with Elizabeth Ayer) *Exact Hausdorff measure and intervals of maximal density for Cantor sets*, Transactions American Mathematical Society 351 (1999), 3725–3741.
- [R70] *Isoperimetric estimates on Sierpinski gasket type fractals*, Transactions American Mathematical Society 351 (1999), 1705–1752.
- [R71] (with Kyallee Dalrymple and Jade P. Vinson) *Fractal differential equations on the Sierpinski gasket*, Journal of Fourier Analysis and Applications 5 (1999), 203–285.
- [R72] (with Yang Wang) *Geometry of self–affine tiles I*, Indiana University Mathematics Journal 48 (1999), 1–23.
- [R73] (with Richard Kenyon, Jie Li and Yang Wang) *Geometry of self–affine tiles II*, Indiana University Mathematics Journal 48 (1999), 25–42.
- [R74] (with Oren Ben–Basset and Alexander Teplyaev) *What is not in the domain of the Laplacian on Sierpinski gasket type fractals*, Journal of Functional Analysis 166 (1999), 197–217.
- [R75] *Some properties of Laplacians on fractals*, Journal of Functional Analysis 164 (1999), 181–208.
- [R76] *Taylor approximations on Sierpinski gasket type fractals*, Journal of Functional Analysis, 174 (2000), 76–127.
- [R77] (with Michael Usher) *Splines on fractals*, Mathematical Proceedings of the Cambridge Philosophical Society, 129 (2000), 331–360.
- [R78] *Gibbs’ phenomenon and arclength*, Journal of Fourier Analysis and Applications, 6 (2000), 533–536.
- [R79] *Mock Fourier series and transforms associated with certain Cantor measures*, Journal d’Analyse Mathématique, 81 (2000), 209–238.
- [R80] *The shape of the error in wavelet approximation and piecewise linear interpolation*, Mathematical Research Letters, 7 (2000), 317–327.
- [R81] (with Jun Kigami and Daniel Sheldon) *Green’s functions on fractals*, Fractals 8 (2000), 385–402.
- [R82] *The Laplacian on the Sierpinski gasket via the method of averages*, Pacific Journal of Mathematics, 201 (2001), 241–256.
- [R83] (with Michael Gibbons and Arjun Raj) *The finite element method on the Sierpinski gasket*, Constructive Approximation 17 (2001), 561–588.
- [R84] (with Jun Kigami and Katharine C. Walker) *Constructing a Laplacian on the diamond fractal*, Experimental Mathematic, 10 (2001), 437–448.
- [R85] (with Nina Huang) *Sampling theory for functions with fractal spectrum*, Experimental Mathematics 10 (2001), 619–638.
- [R86] *Harmonic mappings of the Sierpinski gasket to the circle*, Proceedings American Mathematical Society 130 (2001), 805–817.
- [R87] (with Anders Öberg and Andrew Q. Yingst) *Level sets of harmonic functions on the Sierpinski gasket*, Arkiv för Matematik, 40 (2002), 335–362.

- [R88] (with Scott Bailey and Theodore Kim) *Inside the Lévy dragon*, American Mathematical Monthly, 109 (2002), 689–703.
- [R89] (with Bryant Adams, S. Alex Smith and Alexander Teplyaev) *The spectrum of the Laplacian on the pentagasket*, Trends in Mathematics: Fractals in Graz 2001, Birkhauser (2003), 1–24.
- [R90] (with Jeremy Stanley and Alexander Teplyaev) *Energy partition on fractals*, Indiana University Mathematics Journal 52 (2003), 133–156.
- [R91] *Function spaces on fractals*, Journal of Functional Analysis 198 (2003), 43–83.
- [R92] (with Richard Oberlin and Brian Street) *Sampling on the Sierpinski gasket*, Experimental Mathematics 12 (2003), 403–418.
- [R93] *Fractafolds based on the Sierpinski gasket and their spectra*, Transactions American Mathematical Society 355 (2003), 4019–4043.
- [R94] (with P. Edward Herman and Roberto Peirone)  *$p$ -energy and  $p$ -harmonic functions on Sierpinski gasket type fractals*, Potential Analysis 20 (2004), 125–148.
- [R95] (with Carto Wong) *The  $p$ -Laplacian on the Sierpinski gasket*, Nonlinearity 17 (2004), 595–616.
- [R96] (with Robert Meyers and Alexander Teplyaev) *Dirichlet forms on the Sierpinski gasket*, Pacific Journal of Mathematics 217 (2004), 149–174.
- [R97] (with Jonathan Needleman, Alexander Teplyaev and Po–Lam Yung) *Calculus on the Sierpinski gasket I: polynomials, exponentials and power series*, Journal of Functional Analysis 215 (2004), 290–340.
- [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.
- [R99] *Analysis on products of fractals*, Transactions American Mathematical Society 357 (2005), 571–615.
- [R100] *Laplacians on fractals with spectral gaps have nicer Fourier series*, Mathematical Research Letters, 12 (2005), 269–274.
- [R101] (with Kasso Okoudjou) *Weak uncertainty principles on fractals*, Journal of Fourier Analysis and Applications, 11 (2005), 315–331.
- [R102] (with Shawn Drenning, Judith Palagallo and Thomas Price) *Outer boundaries of self-similar tiles*, Experimental Mathematics, 14 (2005), 199–209.
- [R103] *Solvability for differential equations on fractals*, Journal d’Analyse Mathématique, 96 (2005), 247–267.
- [R104] (with Nitsan Ben–Gal, Abby Shaw–Krauss, and Clint Young) *Calculus on the Sierpinski gasket II: point singularities, eigenfunctions, and normal derivatives of the heat kernel*, Transactions American Mathematical Society, 358 (2006), 3883–3936.
- [R105] *Convergence of mock Fourier series*, Journal d’Analyse Mathématique, 20 (2006), 333–353.
- [R106] (with Kasso Okoudjou) *Asymptotics of eigenvalue clusters for Schrodinger operators on the Sierpinski gasket*, Proceedings American Mathematical Society, 135 (2007), 2453–2459.
- [R107] (with Brian Bockelman) *Partial differential equations on products of Sierpinski gaskets*, Indiana University Mathematics Journal, 56 (2007), 1361–1375.

- [R108] (with Mihai Cucuringu) *Self-similar energy forms on the Sierpinski gasket with twists*, Potential Analysis, 27 (2007), 45-60.
- [R109] (with Carlos Avenancio-Leon) *Local behavior of harmonic functions on the Sierpinski gasket*, Illinois Journal of Mathematics, 51 (2007), 1061-1075.
- [R110] (with Jonas Azzam and Michael Hall) *Conformal energy, conformal Laplacian, and energy measures on the Sierpinski gasket*, Transactions American Mathematical Society, 360 (2008), 2089-2130.
- [R111] (with Anna Blasiak and Baris Evren Ugurcan) *Spectra of self-similar Laplacians on the Sierpinski gasket with twists*, Fractals, 16 (2008), 43-68.
- [R112] (with Mihai Cucuringu) *Infinitesimal resistance metrics on Sierpinski gasket type fractals*, Analysis, 28 (2008) 319-331.
- [R113] (with Luke Rogers and Alexander Teplyaev) *Smooth bumps, a Borel theorem, and partitions of smooth functions on p.c.f. fractals*, Transactions American Mathematical Society, 361 (2009) 1765-1790.
- [R114] (with Jessie DeGrado and Luke Rogers) *Gradients of Laplacian eigenfunctions on the Sierpinski gasket*, Proceedings of the American Mathematical Society, 137 (2009) 531-540.
- [R115] (with Kasso Okoudjou and Luke Rogers) *Generalized eigenfunctions and a Borel theorem on the Sierpinski gasket*, Canadian Mathematical Bulletin, 52 (2009), 105-116.
- [R116] (with Edward Fan and Zuhair Khandker) *Harmonic oscillators on infinite Sierpinski gaskets*, Communications in Mathematical Physics, 287 (2009), 351 -382.
- [R117] (with Adam Allan and Michael Barany) *Spectral operators on the Sierpinski gasket I*, Complex Variables and Elliptic Equations, 54 (2009), 521-543.
- [R118] *A fractal quantum mechanical model with Coulomb potential*, Communications on Pure and Applied Analysis, 8 (2009), 743-755.
- [R119] *Periodic and almost periodic functions on infinite Sierpinski gaskets*, Canadian Journal of Mathematics, 61 (2009), 1182-1200.
- [R120] (with Huo-Jun Ruan) *Covering maps and periodic functions on higher dimensional Sierpinski gaskets*, Canadian Journal of Mathematics, 61 (2009), 1151-1181.
- [R121\*] (with Shawn Drenning) *Spectral decimation on Hambly's homogeneous hierarchical gaskets*, submitted for publication.
- [R122\*] *Transformation of spectra of graph Laplacians*, Rocky Mountain Journal of Mathematics, to appear.
- [R123\*] (with Tyrus Berry and Steven Heilman) *Outer approximation of the spectrum of a fractal Laplacian*, Experimental Mathematics, to appear.
- [R124\*] *Waves are recurrent on noncompact fractals*, Journal of Fourier Analysis and Applications, to appear.
- [R125\*] (with Shu Tong Tse) *Local behavior of smooth functions for the energy Laplacian on the Sierpinski gasket*, Analysis, to appear.
- [R126\*] (with Kasso A. OKoudjou and Luke G. Rogers) *Szegő limit theorems on the Sierpinski gasket*, Journal of Fourier Analysis and Applications, to appear.
- [R127\*] (with Marius Ionescu, Erin P.J. Pearse, Luke G. Rogers and Huo-Jun Ruan) *The resolvent kernel for pcf self-similar fractals*, Transactions of the American Mathematical Society, to appear.
- [R128\*] (with Steven M. Heilman) *Homotopies of eigenfunctions and the spectrum of the Laplacian on the Sierpinski carpet*, Fractals, to appear.

- [R129\*] (with Ying Ying Chan) *Homeomorphisms of fractafolds*, submitted for publication.
- [R130\*] (with Taryn C. Flock) *Laplacians on a family of Julia sets*, submitted for publication.
- [R131\*] (with Luke Rogers) *Distribution theory on P.C.F. fractals*, submitted for publication.
- [R132\*] (with Sarah Constantine and Miles Wheeler) *Analysis of the Laplacian and spectral operators on the Vicsek set*, submitted for publication.
- [R133\*] (with Steven M. Heilman and Philip Owrutsky) *Orthogonal polynomials with respect to self-similar measures*, submitted for publication.

### Expository Publications

- [E1] *Radon inversion — variations on a theme*, American Mathematical Monthly, 89 (1982), 377–384, 420–423.
- [E2] *Para-differential operators — Another step forward for the method of Fourier*, Notices of the American Mathematical Society, 29 (1982), 402–406.
- [E3] *Mathematics on display*, Mathematical Intelligencer, 5 (1983), 37–40.
- [E4] *What’s up, moonface?*, UMAP Journal, 6 (1985), 3–34.
- [E5] *Realms of mathematics: elliptic, hyperbolic, sub-elliptic*, Mathematical Intelligencer, 9 (1987), 56–64.
- [E6] Book review of “*Noncommutative harmonic analysis*” by Michael E. Taylor, Bulletin of the American Mathematical Society, 17 (1987), 152–156.
- [E7] (with R. R. Coifman, G. Graziosi and J. Hallquist) *The School of Zygmund* in “A Century of Mathematics in America III”, American Mathematical Society (1989), 343–368.
- [E8] Book review of “*Heat kernels and spectral theory*”, by E. B. Davis, Bulletin (New Series) of the American Mathematical Society, 23 (1990), 222–227.
- [E9] *How to make wavelets*, American Mathematical Monthly, 100 (1993), 539–556.
- [E10] *Construction of Orthonormal Wavelets. Wavelets: Mathematics and Applications*, (J. Benedetto and M. Frazier, eds.) (1993), CRC Press.
- [E11] *Self-similarity in harmonic analysis* (Survey article), Journal of Fourier Analysis and Applications, 1 (1994), 1–37.
- [E12] *Analysis on fractals*, Notices American Mathematical Society 46 (1999), 1199–1208.
- [E13] *Evaluating integrals using self-similarity*, American Mathematical Monthly, 107 (2000), 316–326.
- [E14] (with Steven M. Heilman) *Localized eigenfunctions: here you see them, there you don’t*, Notices American Mathematical Society, to appear.

### Unpublished Educational Materials

- [U1] *The bouncing ball — an exercise in mathematical modeling*
- [U2] *What to do till the topologist comes (mathematical activities for children).*

### Books

- [B1] *A guide to distribution theory and Fourier transforms*, World Scientific Publishing, 2003 (reprinted from 1993 CRC Press edition).
- [B2] *The way of analysis*, Jones and Bartlett Publishers, 1995.
- [B3] *Differential equations on fractals: a tutorial*, Princeton University Press, 2006.

### Web Sites

(created by students working under my supervision)

- [W1] Michael Gibbons and Arjun Raj, *The finite element method on the Sierpinski gasket* (1999), <http://www.mathlab.cornell.edu/~gibbons>
- [W2] Nina (Tillman) Huang, *Sampling theory for functions with fractal spectrum* (2000), <http://www.mathlab.cornell.edu/~tillman>
- [W3] Gregory Padowski, *Harmonic mappings of the Sierpinski gasket* (2000), <http://www.mathlab.cornell.edu/~gp36>
- [W4] Scott Bailey and Theodore Kim, *Lévy's dragon* (2001), <http://www.mathlab.cornell.edu/~twk6/>
- [W5] P. Edward Herman, *p-energy on the Sierpinski gasket* (2001), <http://www.mathlab.cornell.edu/~eddie/>
- [W6] Richard Oberlin and Brian Street, *Sampling on the Sierpinski gasket* (2001), <http://www.mathlab.cornell.edu/~brian/sampling/>
- [W7] Alex Smith, *The finite element method on the pentagasket* (2002), <http://www.mathlab.cornell.edu/~sas60>
- [W8] Carto Wong, *p-Laplacian on the Sierpinski gasket* (2002), <http://www.mathlab.cornell.edu/~carto/>
- [W9] Jonathan Needleman and Polam Yung, *Polynomials and power series on the Sierpinski gasket* (2002), <http://www.mathlab.cornell.edu/~nman/>
- [W10] Kevin Coletta, *The finite element method on the Sierpinski gasket* (2002), <http://www.mathlab.cornell.edu/~coletk/>
- [W11] Kealey Dias, *Fourier series on fractals* (2003), <http://www.mathlab.cornell.edu/~kdias/>
- [W12] Nitsan Ben-Gal, *Normal derivatives and polynomials on the Sierpinski gasket* (2003), [www.math.cornell.edu/~bengal/](http://www.math.cornell.edu/~bengal/)
- [W13] Abby Shaw-Krauss, *Singularities at periodic points of the Sierpinski gasket* (2003), [www.math.cornell.edu/~abbysk/](http://www.math.cornell.edu/~abbysk/)
- [W14] Clint Young, *Infinite blow-ups of the Sierpinski gasket* (2003), [www.math.cornell.edu/~bj94192/](http://www.math.cornell.edu/~bj94192/)
- [W15] Brian Bockelman, *Finite element method* (2003), [www.math.cornell.edu/~stu28041/fem/index.htm](http://www.math.cornell.edu/~stu28041/fem/index.htm)
- [W16] Shawn Drenning, *Self Similar Tiles and Fractal Analysis* (2004 – 2009), [www.math.cornell.edu/~sld32](http://www.math.cornell.edu/~sld32)
- [W17] Michael Hall, *Conformal energy, conformal Laplacian and energy measures on the Sierpinski gasket* (2005), [www.math.cornell.edu/~mhall](http://www.math.cornell.edu/~mhall)

- [W18] Tyrus Berry, *Outer approximation* (2005),  
[www.math.cornell.edu/~thb9d](http://www.math.cornell.edu/~thb9d)
- [W19] Carlos Avenancio-Leon, *Local behavior of harmonic functions on the Sierpinski gasket* (2005),  
[www.math.cornell.edu/~avenancioleon](http://www.math.cornell.edu/~avenancioleon)
- [W20] Philip Owrutsky, *Orthogonal polynomials on singular measures* (2006),  
[www.math.cornell.edu/~orthopoly](http://www.math.cornell.edu/~orthopoly)
- [W21] Anna Blasiak, *Self-similar Laplacians on the Sierpinski gasket with twists* (2006),  
[www.math.cornell.edu/~reu/twists](http://www.math.cornell.edu/~reu/twists)
- [W22] Zuhair Khandker, *Harmonic oscillators on infinite Sierpinski gaskets* (2006),  
[www.math.cornell.edu/~khandker](http://www.math.cornell.edu/~khandker)
- [W23] Steven M. Heilman, *Math Research* (2007-2009),  
[www.math.cornell.edu/~smh82](http://www.math.cornell.edu/~smh82)
- [W24] Taryn C. Flock, *Laplacian on a family of quadratic Julia sets* (2008),  
[www.math.cornell.edu/~taryn](http://www.math.cornell.edu/~taryn)
- [W25] Miles Wheeler, *Spectral operators on Vicsek sets* (2008),  
[www.math.cornell.edu/~mhw33](http://www.math.cornell.edu/~mhw33)

## Index by Topics

Borel theorem: R112, R113  
 Bounded mean oscillation: R26, R28  
 Cauchy transforms: R67  
 Coulomb potential: R118  
 Covering maps: R119, R120  
 Distribution theory: R131  
 Elliptic partial differential equations: R14, R17, R25  
 Energy Laplacians: R125  
 Energy partition: R90  
 Experimental mathematics: R54, R61, R63, R64, R67, R69, R71, R73, R77, R81, R82, R83, R84, R85, R88, R89, R92, R94, R95, R97, R98, R102, R104, R107, R109, R111, R117, R123, R125, R128, R130, R132, R133, W1, W2, W3, W4, W5, W6, W7, W8, W9, W10, W11, W12, W13, W14, W15, W16, W17, W18, W19, W20, W21, W22, W23, W24, W25  
 Finite element method: R78, R83, R89, R93, R98, R108, R112, W1, W7, W10, W15  
 Fourier transforms: R20, R23, R24, R31, R43, R44, R45, R46, R49, R54, R56, R64, R79, E11  
 Fourier series: R78, R79, R100, R105  
 Fractafolds: R93, R119, R120, R129  
 Fractal differential equations: R71, R74, R75, R76, R77, R81, R82, R83, R84, R86, R87, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100, R101, R103, R104, R106, R107, R108, R109, R110, R111, R112, R113, R114, R115, R116, R117, R118, R119, R121, R123, R124, R125, R126, R127, R128, R130, R131, R132, E12, W1, W3, W5, W6, W7, W8, W9, W10, W11, W12, W13, W14, W15, W16, W17, W18, W19, W21, W22, W23, W24, W25, B3  
 Fractals and self-similarity: R46, R49, R51, R52, R53, R54, R55, R56, R57, R60, R61, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R79, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100, R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R113, R114, R115, R116, R117, R118, R119, R120, R121, R123, R124, R125, R126, R127, R128, R129, R130, R131, R132, R133, E11, E12, E13, W1, W2, W3, W4, W5, W6, W7, W8, W9, W10, W11, W12, W13, W14, W15, W16, W17, W18, W19, W20, W21, W22, W23, W24, W25, B3  
 Gibbs' phenomenon: R78, R98, W11  
 Graph Laplacians: R117  
 Green's functions: R81  
 Hardy spaces: R15, R17, R47  
 Harmonic analysis on symmetric spaces: R13, R18, R19, R20, R21, R23, R29, R30, R38, R42, R43, R44, R58, R59  
 Harmonic mappings: R86, W3  
 Harmonic oscillator: R116, W22  
 Heat semigroups: R35, R37, R51, R71, R102, R117, R132, W12, W25  
 Heisenberg group: R44, R50, R53, R59, R62  
 Hierarchical fractals: R121, W16  
 Isoperimetric estimates: R70

Julie sets: R130  
 Lévy dragon: R72, R88, R103, W4, W16  
 $L^p$  estimates: R6, R7, R8, R9, R13, R17, R19, R29, R35, R37, R44, R50, R63, R91  
 Localized eigenfunctions: E14  
 Measures: R46, R49, R51, R52, R53, R54, R55, R56, R61, R64, R67, R68, R69, R79, R85, R87, E11, E13, W2  
 Nilpotent Lie groups: R12, R22, R44, R50, R53  
 Orthogonal polynomials: R133, W20  
 Outer Approximation: R111, R123, W18, W21, W23  
 $p$ -Laplacian: R94, R95, W5, W8  
 Pseudodifferential operators: R12, R14, E2  
 Quantum mechanics: R116, R118, R124, W22  
 Radon transforms: R29, R38, R50, R60, E1  
 Resolvants: R127  
 Riemannian geometry: R35, R37, R41, R51  
 Sampling theory: R79, R85, R92, W2, W6  
 Singular integrals: R22, R32, R33  
 Sobolev spaces: R3, R4, R5, R11, R16, R26, R28, R34, R35, R47, R58, R65, R91, R99, R131  
 Spectral theory of Laplacians: R35, R36, R44, R48, R51, R59, R62, R71, R74, R75, R83, R89, R93, R100, R107, R110, R111, R116, R117, R118, R121, R122, R123, R126, R128, R130, R132, E14, W7, W16, W17, W18, W19, W21, W23, W24, W25  
 Splines: R78, R82, R83, R98, R108, W1, W7, W10, W15  
 Sub-Riemannian geometry: R39, R40, R53, E5  
 Szegő Limit Theorems: R125  
 Taylor approximations: R76, R97, R104, R106, R114, W9, W12, W13  
 Tilings: R53, R57, R72, R73, R88, R102, W4, W16  
 Twists: R108, R111, R114, W21  
 Uncertainty principle: R43, R101  
 Vicsek set: R132, W25  
 Wave equations: R8, R9, R10, R24, R25, R27, R30, R71, R98, R124, R132, W10, W25  
 Wavelets: R52, R54, R57, R65, R80, E9, E10