Tentative Schedule

2\textsuperscript{nd} Conference on Analysis and Probability on Fractals

Cornell University
Department of Mathematics
May 31 – June 4, 2005

Tuesday, May 31

Morning Session (9:00 – 11:40)
Morning talks will take place in room 406 Malott Hall.

9:00 – 9:30
Registration, 5\textsuperscript{th} floor lounge, Malott Hall

9:30 – 10:00
Takashi Kumagai, Kyoto University
Random walk on the incipient infinite cluster on trees

10:05 – 10:30
Refreshments in the lounge

10:30 – 11:00
Jun Kigami, Kyoto University
Resistance forms and heat kernel estimates

11:05 – 11:35
Martina Zaehle, University of Jena, Mathematical Institute
Local structures and heat kernals on d-sets

11:40 – 1:00
Lunch Break

Afternoon Session (1:00 – 4:50)

1:00 – 1:55
406 Course Lecture 1
Robert Strichartz, Cornell University
Energy and resistance on the Sierpinski gasket

203 Takashi Kumagai (elaborations)

2:00 – 2:55
406 Course Lecture 2
Zhen-Qing Chen, University of Washington
Introduction to Dirichlet Forms

203 Jun Kigimi (elaborations)

207 Martina Zaehle (elaborations)

3:00 – 3:30
Refreshments in the lounge

3:30 – 3:45
406 David Croyden, Oxford University
Heat kernel estimates for a resistance form under non-uniform volume growth

Svetlana Aroutiounian, North Carolina A&T SU
Fractal correlation dimension - genomic application

3:50 – 4:05 406 Uta Freiberg, Friedrich-Schiller Universitat Jena
Lagrangians on non self-similar fractals

Figen Cilingir, TOBB-Economy and Technology Univ.
Basin of M-Set

4:10 – 4:25 406 Jonathan Jordan, University of Sheffield
A variation on spectral decimation

4:30 – 4:45 406 Kenneth Hochberg, Bar-Ilan University
Longtime behavior of hierarchically structured branching systems

Wednesday, June 1

Morning Session (9:30 – 11:40) in room 406

9:30 – 10:00 Alexander Teplyaev, University of Connecticut
Energy forms on Sierpinski gasket type fractals

10:05 – 10:30 Refreshments in the lounge

10:30 – 11:00 Peter Grabiner, Technische Universitat Graz
Analytic continuation of Zeta functions of Laplacians on fractals

11:05 – 11:35 Michel Lapidus, University of California, Riverside
Complex Dimensions of Self-Similar Structures: from fractal geometry to
geometric measure theory, and back.

11:40 – 1:00 Lunch

Afternoon Session (1:00 – 4:50)

1:00 – 1:55 406 Course Lecture 3
Robert Strichartz, Cornell University
Laplacian on the Sierpinski gasket

203 Alexander Teplyaev (elaborations)

2:00 – 2:55 406 Course Lecture 4
Jun Kigami, Kyoto University
Introduction to heat kernels

203 Peter Grabiner (elaborations)

207 Michel Lapidus (elaborations)

3:00 – 3:30 Refreshments in the lounge

3:30 – 3:45 406 Sze-Man Ngai, Georgia Southern University
Fractal Laplace operators on open subsets of $\mathbb{R}^d$
Thursday, June 2

Morning Session (9:30 – 11:40) in room 406

9:30 – 10:00  
Robert Strichartz, Cornell University  
The significance of spectral gaps

10:05 – 10:30  
Refreshments in lounge

10:30 – 11:00  
Ben Hambly, Oxford  
The heat content and partition function for the Sierpinski carpet

11:05 – 11:35  
Tom Lindstrom, University of Oslo  
Self-homeomorphic fractals - a natural setting for analysis on fractals?

11:40 – 1:00  
Lunch Break

Afternoon Session (1:00 – 4:50)

1:00 – 1:55  
Course Lecture 5  
Alexander Teplyaev  
Properties of the Laplacian on SG

2:00 – 2:55  
Course Lecture 6  
Takashi Kumagai, Kyoto University  
Resistance forms and heat kernels

3:00 – 3:30  
Refreshments in the lounge

3:30 – 3:45  
Kasso Okoudjou, Cornell University  
Weak uncertainty principles on fractals

3:50 – 4:05  
Gunther Schweitzer, University of Technology Graz.

3:50 – 4:05  
Vadim Kaimanovich, University of Bremen  
Amenability of self-similar groups and random walks with internal degrees of freedom.

4:10 – 4:25  
Dorin Ervin Dutkay, Rutgers University  
Ruelle operators and harmonic analysis of fractal measures
Average displacement on symmetric self-similar graphs

Abdul Khaliq, University of Jammu
Deterministic and random vector equilibrium problems

4:10 – 4:25        406  Shawn Drenning, Cornell University
Spectral decimation on Hambly’s homogeneous hierarchical gaskets

4:30 – 4:45        406  Britta Daudert, UC Riverside,
Localization of eigenfunctions on snowflake domains

Friday, June 3

Morning Session (9:30 – 11:40) in room 406

9:30 – 10:00  Christophe Sabot, UMPA, ENS Lyon
Spectral Analysis of a self-similar Sturm-Liouville operator

10:05 – 10:30  Refreshments in the lounge

10:30 – 11:00  Zhen-Qing Chen, University of Washington
Heat kernel estimates for jump processes of mixed Types on metric spaces

11:05 – 11:35  Ka-Sing Lau, Chinese University of Hong Kong
Martin boundaries and analysis on fractals

11:40 – 1:00  Lunch Break

Afternoon Session (1:00 – 4:50)

1:00 – 1:55  406  Course Lecture 7
Alexander Teplyaev, University of Connecticut
Spectral decimation on SG

203  Christophe Sabot (elaborations)

2:00 – 2:55  406  Course Lecture 8
Martin Barlow, University of British Columbia
Heat kernels on measure-metric spaces

203  Zhen-Qing Chen (elaborations)

207  Ka-Sing Lau (elaborations)

3:00 – 3:30  Refreshments in the lounge

3:30 – 3:45  406  Andras Telcs, SZIT BME
Random walk on weakly homogeneous graphs

203  Manta Rani, U.P. Technical University, Lucknow
General Pascal triangle and their cellular automata

3:50 – 4:05  406  Anders Pelander, Uppsala University
Infinite dimensional perturbations of i.f.s. and infinitesimal behavior of smooth functions on the Sierpinski gasket
203  Victor Sirvent, Universidad Simon Bolivar
Space filling-curves and geodesic laminations

4:10 – 4:25  406  Prabhu Janakiraman, University of Illinois, Urbana
Limiting weak-type behavior of the vector Riesz transform acting on singular measures

4:30 – 4:45  406  Erin Pearse, University of California, Riverside
A tube formula for the Koch snowflake curve, with applications to complex dimensions

Saturday, June 4, 2005

Morning Session (9:30 – 11:40) in room 406

9:30 – 10:00  Masanori Hino, Kyoto University
On singularity of energy measures on self-similar sets

10:05 – 10:30  Refreshments in the lounge

10:30 – 11:40  Open Problems Session

11:40 – 1:00  Lunch Break

Afternoon Session (1:00 – 4:30)

1:00 – 1:55  406  Course Lecture 9
Jun Kigami
Laplacians on p.c.f. fractals

203  Masanori Hino (elaborations)

2:00 – 2:55  406  Course Lecture 10
Ben Hambly
Heat kernels on fractals

3:00 – 3:30  Refreshments in the lounge

3:30 – 3:45  406  Roberto Peirone, Universita di Roma Tor Vergata
Existence of eigenforms for renormalization with weights on fractals

3:50 – 4:05  406  Po-Lam Yung, Chinese University of Hong Kong
Doubling properties of self-similar measures

4:10 – 4:25  406  Anna Soos, Babes-Bolyai University
IFS and Homogenization