

Rudolf H. Riedi

Professeur spécialisé
Mathematics and IT
School of Engineering and Architecture, Fribourg
CH-1705 Fribourg
web: rudolf.riedi.home.hefr.ch/

Contact:
rudolf.riedi@hefr.ch
Lerberstrasse 17
CH-3013 Bern
+41 / 79 / 767 9893

BOOK CHAPTERS

RUDOLF RIEDI

Multifractal Scaling: General Theory and Approach by Wavelets.
pp 139–177, chapter 4 in “Scaling, Fractals and Wavelets”
eds.: Abry, Gonçalves, Lévy Véhel (Wiley 2009)
ISBN: 978-1-84821-072-1

RUDOLF H. RIEDI

Multifractal Processes
chapter 28, pp 625-715, in “Long range dependence : theory and applications”,
eds. Doukhan, Oppenheim and Taqqu (Birkhäuser 2002)
ISBN: 0817641688.

RUDOLF H. RIEDI

Lois d'échelle multifractales: introduction et usage des ondelettes
chapitre 2, pp 53–100, en “Lois d'échelle et Fractals” (vol 2),
eds. Abry, Gonçalves, Lévy Véhel (Hermès Lavoisier, 2002)
ISBN 978-2-7462-0410-2.

W. WILLINGER, V. PAXSON, R. RIEDI AND M. TAQQU

Long-Range Dependence and Data Network Traffic
chapter 18, pp 373–407, in “Long range dependence : theory and applications”,
eds. Doukhan, Oppenheim and Taqqu (Birkhäuser 2002)
ISBN: 0817641688.

R. H. RIEDI AND W. WILLINGER

Toward an Improved Understanding of Network Traffic Dynamics
chapter 20, pp 507–530, in “Self-similar Network Traffic and Performance Evaluation”,
eds. Park and Willinger, (Wiley 2000).
ISBN 0-471-31974-0.

J. LEVY-VEHEL AND R. H. RIEDI

Fractional Brownian motion and data traffic modeling: The other end of the spectrum
chapter 15, pp 185–202, in ‘Fractals in Engineering’ eds. Levy-Vehel, Lutton, Tricot, (Springer 1997).

INVITED ARTICLES

R. H. RIEDI

Brownian Motion

Section on Stochastic Modeling, Encycl. of Environmetrics 2nd Edition, Wiley & Sons, 2013.

R. H. RIEDI

Cascades Infinitement Divisibles in Gazette des Mathématiciens (Soc. Math. France)

numéro spécial "Benoît Mandelbrot, Père de la géométrie fractale" 2013, no 136, p 119–128

SPECIAL ISSUES, MAGAZINES, AWARDS

S. SARVOTHAM, R. RIEDI AND R. BARANIUK

Network and User Driven On-Off Source Model for Network Traffic

Computer Networks, **48**, Special issue on Long-Range Dependent Traffic, pp 335-350, (2005).

V. J. RIBEIRO, R. H. RIEDI AND R. G. BARANIUK

Locating Available Bandwidth Bottlenecks

IEEE Internet Computing Magazine, **8** (5), pp 34–41, (September 2004).

V. J. RIBEIRO, R. H. RIEDI, J. NAVRATIL, L. COTTRELL, AND R. G. BARANIUK

pathChirp: Efficient Available Bandwidth Estimation for Network Paths

Proceedings Workshop on Passive and Active Measurement PAM2003, (April 2003). Best Student Paper Award

P. ABRY, R. BARANIUK, P. FLANDRIN, R. RIEDI, D. VEITCH

The Multiscale Nature of Network Traffic: Discovery, Analysis, and Modelling

IEEE Signal Processing Magazine, **19** (3), pp 28–46, (2002).

R. H. RIEDI, M. S. CROUSE, V. J. RIBEIRO, AND R. G. BARANIUK

A Multifractal Wavelet Model with Application to TCP Network Traffic

IEEE Trans. on Information Theory, Special Issue **45**, pp 992–1018, (1999).

JOURNAL PAPERS

A. KESHAVARZ-HADDAD AND R. H. RIEDI

Arena Function: A Framework for Computing Capacity Bounds in Wireless Networks,

IEEE Transactions on Wireless Communications, **17** (2), 1134-1146, (Feb 2018).

R. H. RIEDI AND P. GONÇALVES

A strong Tauberian theorem for characteristic functions

Appl. Comput. Harmon. Anal., Letter to the Editor, **39**, p 552-557 (2015).

A. KESHAVARZ-HADDAD AND R. H. RIEDI

Bounds on the Benefit of Network Coding for Wireless Multicast and Unicast,

IEEE Transactions on Mobile Computing, **13** (1), 102-115, (Jan 2014).

P. MANNERSALO, I. NORROS AND R. H. RIEDI

Multifractal Analysis of Infinite Products of Stationary Jump Processes

Journal of Probability and Statistics, vol. 2010, Article ID 807491, 26 pages, (2010).

- B. ZHANG, E. NG, A. NANDI, R. RIEDI, P. DRUSCHEL, G. WANG
Measurement-Based Analysis, Modeling, and Synthesis of the Internet Delay Space
 Transactions on Networking, **18**(1), 229–242, (2010).
- S. CROSBY, R. RIEDI AND D. WALLACH
Opportunities and Limits of Remote Timing Attacks
 ACM Transactions on Information and Systems Security (TISSEC) **12**(3), (January 2009).
- S. DU, A. KHAN, S. PALCHAUDHURI, A. POST, A. SAHA, P. DRUSCHEL, D. JOHNSON AND R. RIEDI
Safari: A Self-Organizing, Hierarchical Architecture for Scalable Ad Hoc Networking.
 Ad Hoc Networks **6**(4), 485–507, (2008).
- V. RIBEIRO, R. RIEDI AND R. BARANIUK
Optimal sampling strategies for multiscale stochastic processes
 IMS Lecture Notes — Monograph Series 2nd Lehmann Symposium on Optimality **49**, 266 – 290, (2006).
- V. J. RIBEIRO, R. H. RIEDI AND R. G. BARANIUK
Multiscale Queuing Analysis
 IEEE Trans. on Networking, **14** (5), 1005-1018 (October 2006).
- P. GONÇALVES AND R. H. RIEDI
Diverging moments and parameter estimation,
 J. American Statistical Association, **100** (472), 1382-1393, (December 2005).
- P. CHAINAIS, R. RIEDI, AND P. ABRY
On non scale invariant infinitely divisible cascades,
 IEEE Trans. Information Theory, **51** (3), 1063–1083, (March 2005).
- P. CHAINAIS, R. RIEDI, AND P. ABRY
Warped infinitely divisible cascades: beyond power laws,
 Traitement du Signal, **22** (1), (2005).
- V. ALMEIDA, D. MENASCE, R. RIEDI, F. RIBEIRO, R. FONSECA, AND W. MEIRA JR.
A Hierarchical and Multiscale Analysis of E-Business Workloads
 Performance Evaluation, **54** (1), pp 33–57, (2003).
- P. MANNERSALO, I. NORROS AND R. H. RIEDI
Multifractal products of stochastic processes: construction and some basic properties
 Advances in Applied Probability, **34** (4), pp 888–903, (2002).
- J. HANNIG, J. S. MARRON AND R. H. RIEDI
Zooming Statistics: Inference across scales
 J. Korean Statistical Society, **30** (2), pp 327–345, (2001).
- C. TRICOT AND R. H. RIEDI
Attracteurs, orbites et ergodicite
 Ann. Math. Blaise Pascal **6**, pp 55–72, (1999).
- R. H. RIEDI AND B. B MANDELBROT
Exceptions to the Multifractal Formalism for Discontinuous Measures
 Math. Proc. Cambridge Phil. Soc. **123**, pp 133-157, (1998).

R. H. RIEDI AND B. B MANDELBROT
Inversion Formula for Continuous Multifractals
Adv. Appl. Math. **19**, pp 332–354, (1997).

B. B MANDELBROT AND R. H. RIEDI
Inverse Measures, the Inversion Formula and Discontinuous Multifractals
Adv. Appl. Math. **18**, pp 50–58, (1997).

R. H. RIEDI AND I. SCHEURING
Conditional and Relative Multifractal Spectra
Fractals. An Interdisciplinary Journal. **5**, pp 153-168, (1997).

R. PASTOR-SATORRAS AND R. RIEDI
Numerical Estimates of Generalized Dimensions $D(q)$ For Negative q
J. Phys. A: Math. Gen. **29**, L391–L398, (1996).

R. H. RIEDI AND B. B MANDELBROT
Multifractal Formalism for Infinite Multinomial Measures
Adv. Appl. Math.: **16**, pp 132–150, (1995).

R. H. RIEDI
An Improved Multifractal Formalism and Self-Similar measures
J. Math. Anal. & Appl.: **189**, pp 462–490, (1995).

I. SCHEURING AND R. H. RIEDI
Application of Multifractals to the Analysis of Vegetation Pattern
J. Vegetation Science: **5**, pp 489–496, (1994).

R. H. RIEDI
Explicit bounds for the Hausdorff Dimension of Certain Self-Affine Sets
Fractals in the Natural and Applied Sciences, IFIP Trans., M. Novak ed., pp 313–324, (Amsterdam 1994).

CONFERENCE PROCEEDINGS (ALL REFEREED)

E. RAPPOS, S. ROBERT, R. RIEDI
A Cloud Data Center Optimization Approach Using Dynamic Data Interchanges
IEEE 2nd International Conference on Cloud Networking (CloudNet), San Francisco, CA, November 2013.

H. FLORES, R. RIEDI, S. EIDENBENZ AND N. HENGARTNER
On the Impact of Realism of Mobility Models for Wireless Networks
IEEE Globecom 2008, Global Communications Conf., New Orleans, LA, December 2008.

RUDOLF H. RIEDI
Shot-Noise Cascades
Fractal Geometry & Stochastics 4, Greifswald, Germany, September 2008.

A. KESHAVARZ-HADDAD AND R. RIEDI
Bounds on the Benefit of Network Coding: Throughput and Energy Saving in Wireless Networks
IEEE INFOCOM 2008, 27th Ann. Conf. Computer Communications, Phoenix, Arizona, April 2008.

A. KESHAVARZ-HADDAD AND R. RIEDI

Multicast Capacity of Large Homogeneous Multihop Wireless Networks

6th Intl. Symp. on Modeling and Optim. in Mobile, Ad Hoc, and Wireless Networks, Berlin, Germany, April 2008.

R. RIEDI AND D. GERSHMAN,

Infinitely Divisible Shot-Noise: Modeling Fluctuations in Networking, Finance and Turbulence,

Proc. International Conference on Noise and Fluctuations, Tokyo, Japan, September 2007.

A. KESHAVARZ-HADDAD AND R. RIEDI

Bounds for the Capacity of Wireless Multihop Networks Imposed by Topology and Demand

MobiHoc, 8th ACM International Symposium on Mobile Ad Hoc Networking and Computing, September 2007.

A. KESHAVARZ-HADDAD, V. RIBEIRO AND R. RIEDI

DRB and DCCB: Efficient and Robust Dynamic Broadcast for Ad Hoc and Sensor Networks

IEEE Comm. Soc. Conf. on Sensor, Mesh and Ad Hoc Comm. and Networks (SECON), San Diego, CA, June 2007.

A. KESHAVARZ-HADDAD AND R. RIEDI

On the Broadcast Capacity of Multihop Wireless Networks: Interplay of Power, Density and Interference

IEEE Comm. Soc. Conf. on Sensor, Mesh and Ad Hoc Comm. and Networks (SECON), San Diego, CA, June 2007.

P. MANNERSALO, A. KESHAVARZ-HADDAD AND R. RIEDI

Broadcast Flooding Revisited: Survivability and Latency

IEEE INFOCOM 2007, 26th Ann. Conf. Computer Communications, Anchorage, Alaska, USA, May 2007.

B. ZHANG, E. NG, A. NANDI, R. RIEDI, P. DRUSCHEL AND G. WANG

Measurement-Based Analysis, Modeling, and Synthesis of the Internet Delay Space

Internet Measurement Conference IMC2006, Rio de Janeiro, Brazil, October 2006.

N. HENGARTNER, H. FLORES, S. EIDENBENZ AND R. RIEDI

Describing MANETS: Principal Component Analysis of Sparse Mobility Traces

Intern. Workshop on Performance Evaluation of Wireless Ubiquitous Networks, Malaga, Spain, October 2006.

A. KESHAVARZ-HADDAD, V. RIBEIRO, R. RIEDI

Broadcast Capacity in Multihop Wireless Networks

MobiCom'06, Los Angeles, CA, September 2006.

A. KESHAVARZ-HADDAD, V. RIBEIRO, R. RIEDI

Color-Based Broadcasting for Ad Hoc Networks

4th Intern. Symp. on Modeling and Optimization in Wireless Networks, WiOPT'06, Boston, MA, April 2006.

R. KING, R. RIEDI, AND R. BARANIUK

TCP-Africa: An Adaptive and Fair Rapid Increase Rule for Scalable TCP

Proceedings of IEEE INFOCOM 2005, Miami, FL, March 2005.

R. KING, R. RIEDI, AND R. BARANIUK

Evaluating and Improving TCP-Africa: an Adaptive and Fair Rapid Increase Rule for Scalable TCP

International Workshop on Protocols for Fast Long-Distance Networks, Lyon, France, February 2005.

V. J. RIBEIRO, R. H. RIEDI AND R. G. BARANIUK

Spatio-Temporal Available Bandwidth Estimation with pathChirp

Proceedings SIGMETRICS/Performance'04, New York, NY, June 2004.

- R. RIEDI, A. KESHAVARZ-HADDAD, S. SARVOTHAM AND R. BARANIUK
Fractals in Networking: Modeling and Inference
 Proceedings of Fractals 2004, Conference on “Fractals and Complexity in Nature”, Vancouver, Canada, April 2004.
- V. J. RIBEIRO, R. H. RIEDI AND R. G. BARANIUK
Spatio-Temporal Available Bandwidth Estimation for High-Speed Networks
 ISMA 2003 Bandwidth Estimation Workshop (Best), CAIDA, La Jolla, CA, December 2003.
- V. J. RIBEIRO, R. H. RIEDI, J. NAVRATIL, L. COTTRELL, AND R. G. BARANIUK
pathChirp: A Light-Weight Available Bandwidth Estimation Tool for Network-Aware Applications
 Proceedings LACSI Symposium, Sante Fe, NM, October 2003.
- V. J. RIBEIRO, R. H. RIEDI AND R. G. BARANIUK
Sampling Strategies for Multiscale Models with Application to Network Traffic Estimation
 Proceedings Workshop on Statistical Signal Processing SSP03, St. Louis, MO, September 2003
- P. CHAINAIS, R. RIEDI AND P. ABRY
On non scale invariant Infinitely Divisible Cascades
 Proceedings of the 21st Colloquium GRETSI’03, France, September 2003.
- P. CHAINAIS, R. RIEDI AND P. ABRY
Scale invariant infinitely divisible cascades
 Proceedings of 2nd Internat. Symp. on Physics in Signal and Image Proc., Grenoble, France, January 2003
- T. KARAGIANNIS, M. FALOUTSOS AND R. H. RIEDI
Long-Range Dependence: Now you see it now you don’t!,
 Proceedings Global Internet, Taiwan, November 2002.
- S. SARVOTHAM, R. H. RIEDI AND R. G. BARANIUK
Multiscale Connection-level Analysis of Network Traffic
 Proceedings of the 36th Conference on “Signals, Systems and Computers”, Asilomar, CA, November 2002.
- P. CHAINAIS, R. RIEDI, P. ABRY
Compound Poisson cascades, Colloque “Autosimilarite et Applications” May 2002,
 appeared in Annales Mathematiques Blaise Pascal, Clermont-Ferrant, France.
- S. SARVOTHAM, X. WANG, R. H. RIEDI AND R. G. BARANIUK
Additive and Multiplicative Mixture trees for Network Traffic Modeling
 Proceedings ICASSP2002, Orlando, Florida, May 2002.
- X. WANG, S. SARVOTHAM, R. RIEDI, AND R. BARANIUK
Connection-Level Modeling of Network Traffic
 DIMACS Workshop on Internet and WWW Measurement and Modeling, Rutgers, NJ, 2002.
- S. SARVOTHAM, R. H. RIEDI AND R. G. BARANIUK
Connection-level Analysis and Modeling of Network Traffic
 Proceedings ACM SIGCOMM Internet Measurement Workshop, San Francisco, November 2001.
- V. J. RIBEIRO, R. H. RIEDI AND R. G. BARANIUK
Wavelets and Multifractals for network traffic modeling and inference
 Proceedings ICASSP Salt Lake City, Utah, May 2001.

V. ALMEIDA, D. MENASCE, R. RIEDI, F. RIBEIRO, R. FONSECA, AND W. MEIRA JR.
Analyzing Robot Behavior and their Impact on Caching
Proc. Sixth Workshop on Web Caching and Content Distribution, Boston, MA, June 2001.

D. MENASCE, V. ALMEIDA, R. RIEDI, F. RIBEIRO, R. FONSECA, AND W. MEIRA JR.
Characterizing and Modeling Robot Workload on E-Business Sites
Proc. ACM SigMetrics'01, June 2001.

R. H. RIEDI
On the multiplicative structure of network traffic
Proceedings IMA Conference on Mathematics in Signal Processing, Warwick, December 2000.

D. MENASCE, F. RIBEIRO, V. ALMEIDA, R. FONSECA, R. H. RIEDI, W. MEIRA JR.
In Search of Invariants for E-Business Workloads
Proc. EC'00, ACM Conference on *Electronic Commerce*, IMA, Minneapolis, MN, October 2000.
V. J. RIBEIRO, M. COATES, R. H. RIEDI, S. SARVOTHAM, B. HENDRICKS AND R. G. BARANIUK
Multifractal Cross-Traffic Estimation
Proc. ITC Seminar on "IP Traffic Measurement, Modeling and Management" Monterey, CA, September 2000.

J. K. ROMBERG, R. RIEDI, H. CHOI, AND R. G. BARANIUK
Multiplicative Multiscale Image Decompositions
Proc. SPIE's 45th Annual Meeting, Internat. Symp. on Optical Science and Techn., San Diego, CA, August 2000.

R. NEELAMANI, J. ROMBERG, H. CHOI, R. RIEDI, AND R. BARANIUK
Multiscale Image Segmentation using joint Texture and Shape analysis
Proc. SPIE's 45th Annual Meeting, Internat. Symp. on Optical Science and Techn., San Diego, CA, August 2000.

R. H. RIEDI, M. S. CROUSE, V. J. RIBEIRO, AND R. G. BARANIUK
Network Traffic Modeling using a Multifractal Wavelet Model
Proceedings of Third European Congress of Mathematics, Barcelona, Spain, July 2000.

V. J. RIBEIRO, R. H. RIEDI, M. S. CROUSE, AND R. G. BARANIUK
Multiscale Queuing Analysis of Long-Range-Dependent Network Traffic
Proceedings of IEEE INFOCOM 2000, Tel Aviv, Israel, March 2000.

P. GONÇALVES AND R. H. RIEDI
Wavelet Analysis of Fractional Brownian Motion in Multifractal Time
Proceedings of the 17th Colloquium GRETSI'99, Vannes, France, September 1999.

V. J. RIBEIRO, R. H. RIEDI, M. S. CROUSE, AND R. G. BARANIUK
Simulation of Non-Gaussian Long-Range-Dependent Traffic using Wavelets
Proceedings ACM SigMetrics'99, Atlanta, GA, May 1999.

P. MANNERSALO, I. NORROS AND R. H. RIEDI
Multifractal products of stochastic processes: A Preview
COST257(31), 1999.

M. S. CROUSE, R. H. RIEDI, V. J. RIBEIRO, AND R. G. BARANIUK
Network Traffic Modeling using a Multifractal Wavelet Model
Proceedings of 5 th Internat. Symp. on DSP for Communication Systems, Perth, Australia, February 1999.

P. GONÇALVES, R. H. RIEDI, AND R. G. BARANIUK
A Simple Statistical Analysis of Wavelet-based Multifractal Spectrum Estimation
Proceedings of the 32nd Conference on “Signals, Systems and Computers”, Asilomar, CA, November 1998

M. S. CROUSE, R. H. RIEDI, V. J. RIBEIRO, AND R. G. BARANIUK
A Multifractal Wavelet Model for positive Processes
Proceedings of IEEE-SP Internat. Symp. on Time-Frequency and Time-Scale Analysis, Pittsburg, PA, October 1998.

R. H. RIEDI
Multifractals and Wavelets: A potential tool in Geophysics
SEG Conference, New Orleans, September 1998

M. S. CROUSE, R. H. RIEDI, V. J. RIBEIRO, AND R. G. BARANIUK
Multifractal Signal Models with Application to TCP Network Traffic
Proceedings of DSP workshop, Bryce, UT, August 1998.

RUDOLF H. RIEDI
Discontinuous Measures and a Failure of the Multifractal Formalism
Proc. Workshop on “Fractals and Dynamics”, appeared as “*Mathematica Goettingensis*” 5 (1997) pp 23–29.

INVITED TALKS, LECTURES AND VISITS

May 2017 Seminar, Banque Cantonale de Fribourg, Switzerland
April 2017 Seminar, Dept Telecom, EIA Fribourg, Switzerland
November 2016 Seminar, FRI-SAM, EIA Fribourg, Switzerland
February 2016 Seminar, Dept ECE, Rice University, Houston, Texas
Mai 2014 Colloque SCAM (Séminaire Cristolien d’Analyse Multifractale), Paris, France
September 2013 Colloque SCAM (Séminaire Cristolien d’Analyse Multifractale), Porqu erolles, France
February 2012 Colloquium, Dept Mathematics, University of Fribourg, Switzerland
December 2011 Colloquium, Dept Mathematics, ETH Z urich, Switzerland.
December 2011 Seminar, Institute of Statistics, University of Neuchatel, Switzerland.
February 2011 Actuarial Colloquium, University of Lausanne, Switzerland
May 2010 Dept. of Statistics, Rice University, Houston, Texas
June 2009 Dept. of Statistics, Rice University, Houston, Texas

December 2008 IEEE Globecom 2008, Global Communications Conf., New Orleans, LA, 2008.
August 2008 Dept. of Statistics, Rice University, Houston, Texas
August 2008 FGS4, Internat. Conf. on *Fractal Geometrie and Stochastics*, Greifswald, Germany
May 2008 Dept. of Statistics, Rice University, Houston, Texas
April 2008 WiOpt’08, 6th Intl. Symp. on Modeling and Optim. in Mobile, Ad Hoc Networks, Berlin, Germany.
April 2008 IEEE INFOCOM 2008, 27th Ann. Conf. Computer Communications, Phoenix, Arizona.
September 2007 ICNF 2007 Internat. Conf. on *Noise and Fluctuations*, Tokyo, Japan.
June 2007 SECON 2007 on *Sensor, Mesh and Ad Hoc Communications and Networks*, San Diego, CA.
May 2007 IEEE INFOCOM 2007 on *Computer Communications and Networking*, Anchorage, AL.
May 2007 3rd Lehmann Symposium, Houston, TX.
March 2007 Statistics Seminar, Los Alamos National Lab, NM

September 2006 ACM SIGCOMM 2006 on *Computer Communications*, Pisa, Italy
August 2006 Summer School *Stochastic Control in Computer Science and Finance*, TU Kaiserslautern, Germany
July 2006 Conference on *Stochastic Processes and Their Applications*, Paris, France
May 2006 International Workshop on Applied Probability, Univ. of Connecticut

February 2006 Colloquium, Dept. Industrial and Systems Engineering, Texas A&M University

September 2005 Workshop on *Non-linear and Non-stat. Time Series in Comp. Finance*, TU Kaiserslautern, Germany

August 2005 Joint Statistical Meeting of ASA and IMS, Minneapolis, MN

June 2005 Workshop on *Statistics and Computing*, Hailuoto, Finland

May 2005 Statistics Seminar, Los Alamos National Lab, NM

April 2005 Workshop on *Heavy Tails and Long Range Dependence*, Mathematics and OR at Cornell, Ithaca, NY

March 2005 Infocom 2005 on *Computer communications and networking*, Miami, FL

November 2004 DARPA workshop on *Network Management Systems*, Monterey, CA

November 2004 Colloquium, Dept. of Statistics, Texas A&M University, College Station, TX

October 2004 Colloquium, Center for Applied Mathematics, Cornell University, Ithaca, NY

July 2004 Summer School on *Wavelet and Multifractal Analysis*, Corsica, France

July 2004 EPFL-I&C Research Day on *Self-organized Wireless Communication Systems*, Switzerland

June 2004 Seminar, Computer Communications Lab, I&C, EPFL, Lausanne, Switzerland

May 2004 Lehmann Symposium on *Optimality*, Rice University, Houston TX

April 2004 Fractal 2004, Conference on *Complexity and Fractals in Nature*, Vancouver, Canada

March 2004 CoTS Conference of Texas Statisticians, Nacogdoches, TX

March 2004 Workshop on *Powerlaws in probability and statistics*, Luminy-Marseille, France

January 2004 DARPA workshop on *Network Management Systems*, Miami, FL

October 2003 SAMSI workshop on Network Traffic Modeling, UNC, NC

September 2003 IEEE workshop on Statistical Signal Processing, St. Louis, MO

August 2003 Joint Statistical Meeting of ASA and IMS, San Francisco, CA

July 2003 3rd Workshop on Appl and Services in Wireless Networks, Berne, Switzerland

May 2003 DARPA workshop on *Network Management Systems*, San Diego, CA

April 2003 Mathematics Colloquium, Univ. Freiburg, Switzerland

April 2003 Computer Engineering and Networks Laboratory, ETH Zürich, Switzerland

March 2003 Geometry and Analysis Seminar, Dept. of Mathematics, Rice

February 2003 Colloquium, Dept. of Statistics, Rice

November 2002 DARPA workshop on *Network Management Systems*, Chicago, IL

August 2002 Session "Internet Performance and QoS" at SPIE 2002 Boston, MA

June 2002 Pedofract 2002, International Workshop on "Fractal Mathematics", El Barco de Avila, Spain

June 2002 Universidad Politécnica de Madrid, Madrid, Spain

May 2002 Colloque "Autosimilarite et Applications" Clermont-Ferrant, France

May 2002 Workshop on "Turbulence : Measurements and Signals", Cargese, France

April 2002 DARPA workshop on *Network Management Systems*, Baltimore, Maryland

February 2002 DIMACS workshop on *Internet and WWW measurement, mapping, and modeling*, Rutgers, NJ

February 2002 EE Dept., Purdue University, Lafayette, Indiana

January 2002 Virtual Worlds and Simulation conference, SCS, San Antonio, TX

January 2002 AMS Meeting, *Special Session in honor of B. Mandelbrot*, San Diego, CA

November 2001 ACM SIGCOMM *Internet Measurement Workshop*, San Francisco, CA

October 2001 DARPA workshop on *Network Management Systems*, Atlanta, Georgia

October 2001 16th IEEE Annual Workshop on *Computer Communications*, Charlottesville, VA

September 2001 Meeting of the Amer. Math. Soc., Special Session on Fractals, Columbus, Ohio

July 2001 Visiting Researcher, EMU lab, Dept. EE, Melbourne University, Australia

June 2001 Visiting Professor, Dept. Physics, ENS, Lyon, France

April 2001 DIMACS workshop on Wavelet Analysis and Digital Processing, Rutgers, NJ

April 2001 Sprint Labs, Burlingame, CA

April 2001 DARPA workshop on *Network Management Systems*, La Jolla, CA

March 2001 Workshop on *Modelling and Analysis of Network Data* Nat. Inst. Stat. Sci., NC

December 2000 Conference on Mathematics in Signal Processing IMA, Warwick Univ., UK
 December 2000 Mathematics Seminar, St. Andrews University, UK
 September 2000 DARPA workshop on *Network Management Systems*, Albuquerque, New Mexico
 September 2000 ITC Specialist Seminar on *IP Traffic Measurement, Modeling and Management*, Monterey, CA
 June 2000 Conference on *Stochastic Networks*, University of Wisconsin-Madison
 May 2000 Budapest University of Technology and Economics, Hungary
 May 2000 Physics Dept. Eötvös University, Budapest, Hungary
 May 2000 Workshop on High Speed Networking Balatonfüred, Hungary
 May 2000 Center for Satellite and Hybrid Communication Networks, Univ. Maryland, College Park, ML
 April 2000 Dept. of Statistics, Univ. North Carolina, Chapel Hill, NC
 March 2000 InfoComm 2000 on *Computer communications and networking*, Tel Aviv, Israel

October 1999 IMA Workshop on *Scaling phenomena in Communication Networks*, Minneapolis, MN
 October 1999 14th IEEE Annual Workshop on *Computer Communications*, Estes Park, Colorado
 June 1999 Finnish Summer School on *Probability Theory*, Lahti, Finland
 June 1999 VTT National Research Labs, Helsinki, Finland
 June 1999 Nokia Research Labs, Helsinki, Finland
 May 1999 ACM Sigmetrics Conf. on *Measurement and Modeling of Computer Systems*, Atlanta, GA
 March 1999 Dept. of Mathematics, Univ. Federal Minas Gerais, Belo Horizonte, Br
 March 1999 Dept. of Computer Science, Univ. Federal Minas Gerais, Belo Horizonte, Br
 January 1999 Isaac Newton Institute of Mathematical Science, Cambridge, UK
 January 1999 Dept. of Elec. Engin., University of Cambridge & Nortel Labs, Harlow, UK
 January 1999 Dept. of Statistical Mathematics, University of Cambridge, UK

November 1998 32nd Conference on *Signals, Systems and Computers*, Asilomar, CA
 September 1998 SEG meeting 1998, Technical Session on *Novel transforms*, New Orleans, LA
 September 1998 Conference on *Fractal Geometry and Stochastics II*, Usedom (Berlin), Germany
 August 1998 IEEE workshop on *Digital Signal Processing*, Bryce Canyon, UT
 May 1998 Gordon Research Conference on *Fractals*, Il Ciocco, Barga, Italy
 March 1998 MSRI workshop on *Fine Properties of Stochastic Processes*, UC Berkeley, CA
 March 1998 AMS meeting, Special Session on *Fractal Geometry*, Louisville, KT
 March 1998 AT&T Research Labs, Florham Park, NJ

September 1997 Dept. of Mathematics, Rice University, Houston, TX
 July 1997 Applied Probability Conference, Boston, MA
 June 1997 Conference on Fractals in Engineering 1997, Arcachon, France
 June 1997 Mathematisches Seminar, Dept. of Statistics, University of Berne, Switzerland

November 1996 Institute for Mathematical Stochastics, University Göttingen, Germany
 October 1996 Mathematische Fakultät, Friedrich Schiller University, Jena, Germany
 October 1996 Conference on em Performance Theory and Communication Systems, Lausanne, Switzerland
 June 1996 Gordon Research Conference on *Fractals*, Henniker, NH, USA
 April 1996 Spring School on *Long-range Dependent Processes*, Les Houches, France
 February 1996 Seminaire CNET, France Telecom, Paris

June 1995 AMS Conference on *Smooth Dynamical Systems and Dimension Theory*, Seattle, WA
 February 1995 Mathematical Seminar, Cornell University, Ithaca, NY
 February 1995 Symposium *Fractal Geometry and Self-Similar Phenomena*, Curaçao

June 1994 Conference on *Fractal Geometry and Stochastics*, Finsterbergen, Germany
 June 1994 Mathematische Fakultät, Friedrich Schiller University, Jena, Germany

May 1994 Gordon Research Conference on *Fractals*, San Miniato, Italy
 March 1994 Colloquium in *Economics and Finance*, SCSU, New Haven, CT
 January 1994 Institute National de la Recherche Informatique et Automatique, Paris, France

September 1993 Conference on *Fractals in the Natural and Applied Sciences*, London, England
 August 1993 Conference on *Fractals in the Natural Sciences*, Budapest, Hungary
 July 1993 Mathematische Fakultät, Jena, Germany
 September 1992 Summer School on *Fractals*, Valencia, Spain
 February 1992 Mathematisches Kolloquium, ETH Zürich, Switzerland
 December 1989 State College of St.Gallen, Switzerland, Teachers Seminar

BOOK REVIEWS

”An Introduction to Statistical Signal Processing”
 by Robert M. Gray and Lee D. Davisson,
 review by Rudolf Riedi, in J. Amer. Stat. Assoc., p 12 (September 2006).

EDITORIALS

A. HERO III, I. NORROS, A. PETROPULU AND R. RIEDI
Guest editorial special issue on signal Processing in Networking
 IEEE Transactions on Signal Processing, Special Issue, **51(8)** (2003), pp 2017–2018.

TECHNICAL REPORTS

R. H. RIEDI
Infinitely Divisible Shot-Noise: Cascades of Non-Compact Pulses
 Technical Report (TR2010-02), Rice Univ., Dept. of Statistics, March 2010.

P. MANNERSALO, I. NORROS AND R. H. RIEDI
Multifractal analysis of infinite products of stationary jump processes
 Technical Report (TR2009-02), Rice Univ., Dept. of Statistics, June 2009.

S. A. CROSBY, R. H. RIEDI AND D. S. WALLACH
Opportunities and Limits of Remote Timing Attacks
 Technical Report (TR2007-06), Rice Univ., Dept. of Statistics, February 2007.

P. GONÇALVES AND R. RIEDI
Diverging Moments and Parameter Estimation
 Technical Report (TR2007-05), Rice Univ., Dept. of Statistics, February 2007.

P. CHAINAIS, R. RIEDI, AND P. ABRY
On non scale invariant infinitely divisible cascades
 Technical Report (TR2007-04), Rice Univ., Dept. of Statistics, February 2007.

B. ZHANG, E. NG, A. NANDI, R. RIEDI, P. DRUSCHEL AND G. WANG
Measurement-Based Analysis, Modeling, and Synthesis of the Internet Delay Space
 Technical Report (TR2007-03), Rice Univ., Dept. of Statistics, February 2007.

P. MANNERSALO, A. KESHAVARZ-HADDAD AND R. RIEDI
Broadcast Flooding Revisited: Survivability and Latency
Technical Report (TR2007-02), Rice Univ., Dept. of Statistics, February 2007.

V. J. RIBEIRO, R. H. RIEDI AND R. G. BARANIUK
Optimal sampling strategies for tree-based time series
Technical Report (TR2004-05), Rice Univ., Dept. of Statistics, August 2004.

V. J. RIBEIRO, R. H. RIEDI AND R. G. BARANIUK
Multiscale Queuing Analysis
Technical Report (TR2004-07), Rice University, Dept. of Statistics, August 2004.

R. RIEDI AND P. GONÇALVES
Diverging moments, Characteristic Regularity and Wavelets
Technical Report (TR2004-04), Rice Univ., Dept. of Statistics, August 2004.

R. RIEDI, P. MANNERSALO AND I. NORROS
Multifractals, random partitions, and products of stochastic processes
Technical Report (TR2004-06), Rice Univ., Dept. of Statistics, August 2004.

P. GONÇALVES AND R. RIEDI
Diverging Moments and Parameter Estimation
Research report 4647, INRIA Rhone-Alpes, Nov. 2002. Submitted to JASA.

S. SARVOTHAM, R. H. RIEDI AND R. G. BARANIUK
Connection-level Analysis and Modeling of Network Traffic
Technical Report, Rice Univ. ECE, June 2001.

RUDOLF H. RIEDI
Multifractal Processes
Technical Report 99-06, Rice Univ. ECE, June 1999.

V. J. RIBEIRO, R. H. RIEDI, M. S. CROUSE, AND R. G. BARANIUK
Multiscale Modeling and Queuing Analysis of Long-Range-Dependent Network Traffic
Technical Report 99-08, ECE Dept., Rice University, Aug. 1999.

R. H. RIEDI AND J. LEVY-VEHEL
TCP Traffic is Multifractal: a Numerical Study
Research report 3129, INRIA Rocquencourt, Feb. 1997.

THESIS

R. H. RIEDI
An Improved Multifractal Formalism and Self-affine Measures,
ETH Zürich, Switzerland, 1993.

ONLINE PUBLICATIONS

with S. H. BENNETT, ET AL.

Origin of Fractal Branching Complexity in the Lung (Version Dec 5, 2002, published online only).

<http://rudolf.riedi.home.hefr.ch/UCDavisHemoglobin/fractal.html>

RUDOLF H. RIEDI

Introduction to Multifractals (Version Oct 26, 1999, published online only).

<http://rudolf.riedi.home.hefr.ch/Publ/PDF/intro.pdf>

SOFTWARE

M. CROUSE, V. RIBEIRO, R. BARANIUK, AND R. RIEDI

Multifractal Wavelet Model: statistical analysis and model matching

Free software in C+ available at <http://www.stat.rice.edu/~riedi/soft.html#MWM>

V. RIBEIRO, R. BARANIUK, AND R. RIEDI

pathChirp: active probing for efficient available bandwidth estimation for network paths

Free software in C++ available at <http://www.stat.rice.edu/~riedi/soft.html#PathChirp>

P. CHAINAIS, R. RIEDI, AND P. ABRY

Infinitely Divisible Cascades: stationary, positive time series with prescribed scaling properties

Free Matlab code available at <http://www.stat.rice.edu/~riedi/soft.html#IDC>

P. GONÇALVES AND R. RIEDI

A wavelet-based non-parametric estimator of the tail of a distribution

Free Matlab code available at <http://www.stat.rice.edu/~riedi/soft.html#DM>

S. SARVOTHAM, R. BARANIUK AND R. RIEDI

Alpha-beta: A connection level decomposition of network traffic into Gaussian and non-Gaussian components

Free software in C++ available at <http://www.spin.rice.edu/alphabeta/>