CHRONICLE OF MEETINGS ON FRACTAL GEOMETRY

Prepared by Benoit B. Mandelbrot (BBM)

MARCH 2007

SCIENTIFIC MEETINGS OR SESSIONS (RESEARCH OR TUTORIAL) ON FRACTALS AND/OR SELF-SIMILAR RANDOM PROCESSES, WITH INDICATIONS OF THE EXTENT OF BBM'S PARTICIPATION

NOTE: THIS LIST DOES NOT CLAIM COMPLETENESS. IT OMITS MOST ITEMS IN WHICH FRACTALS ARE INCIDENTAL TO CHAOS OR TO ITERATION OF FUNCTIONS. READERS ARE ENCOURAGED TO POINT OUT ERRORS OR OMISSIONS.

1982 *Summer School on Fractals* (Organizer). Courchevel, Haute-Savoie, FR.

Union Session on Fractals in Geophysics (Co-organizer and speaker). American Geophysical Union, San Francisco CA.

1983 *Session on Fractal Geometry in Nature, Science and Art* (Speaker). American Association for the Advancement of Science, Detroit MI.

Symposium on Fractals (Speaker). Institute of Mathematics and its Applications, Imperial College, London, UK.

Session and Invited Talks on Self-Similar Random Processes (Speaker). Stochastic Processes Conference (Bernoulli Society), Ithaca NY.

Session and Invited Talks on Fractals in Statistical Physics (Speaker). Statphys15 (IUPAP Conf. Statistical Physics), Edinburgh, UK.

Fractals in Dynamical and Stochastic Systems (Speaker). Chaos and Statistical Methods (Kyoto Summer Institute), Kyoto, JP.

Conference on Fractals in the Physical Sciences (Co-organizer and Speaker). National Bureau of Standards, Gaithersburg MD.

1984 *Winter Workshop on Fractals* (Principal Co-organizer and Speaker). Les Houches, Haute-Savoie, FR.

Session on Fractals in Physics (Speaker). American Physical Society (Condensed Matter Section), Detroit MI. *International Conference on Kinetics of Aggregation and Gelation* (Speaker). University of Georgia, Athens GA.

Session on Fractals (Speaker). Symposium für Theoretische Chemie, Emmetten/NW, CH.

Symposium on Fractal Aspects of Materials (Principal Co-organizer and Speaker). Materials Research Society Annual Meeting, Boston MA.

1985 *Special Session on Fractal Geometry* (Organizer and Speaker). American Mathematical Society, Worcester MA.

Fractals and the Geometry of Nature (Featured Speaker). Mathematical Association of America, Salisbury MD.

Scaling Phenomena in Disordered Systems. Geilo, NO.

On Growth and Form: Fractal and Non-Fractal Patterns in Physics. Cargèse, Corsica, FR.

Fractals in Physics (Co-organizer and Speaker). International Center for Theoretical Physics, Trieste, IT.

Gordon Research Conference on Fractals (Chairman). Hawthorne College, Antrim NH.

Course on How to Compute and Render Fractals (Organizer and Speaker). Siggraph '85 Annual Meeting, San Francisco CA.

Gordon Research Conference on Colloids and Interfaces. Meriden NH. (Special Session on Fractals).

Multiple Scattering of Waves in Random Media. University Park PA. (Fractals are a major topic).

Dimensions and Entropies in Chaotic Systems (Principal Speaker). Los Alamos National Laboratory, Los Alamos NM.

Transport and Relaxation Processes in Random Materials. National Bureau of Standards, Gaithersburg MD.

Applications des fractales. Elf-Aquitaine and CNRS, Paris, FR.

International Symposium for Science on Form. University of Tsukuba, JP.

Symposium on Fractal Aspects of Materials (Co-organizer and Speaker). Materials Research Society Annual Meeting, Boston MA. 1986 *Des fractales en mathématique et en physique* (Speaker). Centre International de Rencontres Mathématiques, Marseille-Luminy, FR.

Ensembles fractals, chaos et turbulence. Ecoles CEA - EDF - INRIA, Rocquencourt, FR.

Fractals: a Professional Development Seminar (Co-organizer and Speaker). NE Siggraph / MA College of Art / Boston ACM, Boston MA.

Géométrie Fractale (Speaker). Montréal PQ, CA.

IEEE Antennas and Propagation Meeting. Philadelphia PA (Special Session on fractals).

Summer Institute on Fractals (Organizer). Oberlech, Vorarlberg, AT.

Course on Fractals: Basic Concepts, Computation, etc. Siggraph '86 Annual Meeting, Dallas TX.

Gordon Research Conference on Fractals (Speaker). Colby-Sawyer College, New London NH.

Scaling, Fractals and Non Linear Variability in Geophysics. McGill University, Montreal PQ, CA.

Dynamics on Fractals and Hierarchies of Critical Exponents (Speaker). Orsay, FR.

Fractals in Physical Chemistry. Royal Society of Chemistry, Salford University, Manchester UK.

Session on Self-Similar Processes. First World Congress of the Bernoulli Society, Tashkent, SU.

Workshop on Fractals and Chaos. Centro Alessandro Volta, Como, IT.

Symposium on Fractal Aspects of Materials (Co-organizer). Materials Research Society Annual Meeting, Boston MA.

Catastrophes, Chaos and Fractals. Chautauqua Short Courses for College Teachers, SUNY, Stony Brook NY.

Union Session on Fractals in Geophysics (Co-organizer and Speaker). American Geophysical Union Annual Meeting, San Francisco CA.

1987 *Fraktale und ihre Bedeutung in Mathematik und Naturwissenschaften* (Speaker). Mathematisches Forschungsinstitut, Oberwolfach, DE.

Ensembles fractals (Organizer and Principal Speaker). Ecole d'hiver CEA - EDF - INRIA, Roquencourt, FR. *Fraktalot* (Featured Speaker). L. Eötvös University (Winter School), Budapest, HU.

Fractals in Physics (Plenary session). American Association of Physics Teachers, San Francisco CA.

The Beauty of Fractals (Featured Speaker). Science Museum, Boston MA, and M.I.T., Cambridge MA.

Fractals in Geosciences (Special Session). Mathematical Geologists of the US, Annual Meeting.

Two Courses on Fractals: Computation and Rendering. Siggraph '87 Annual Meeting, Anaheim CA.

Fractals (Session). Seventh International Congress for Stereology, Caen, FR.

Fractal Geometry Lecture Series (Principal Speaker). CBMS Mathematical Sciences Regional Conference, Cincinnati OH.

Computer Graphics of Fractals. University of California Extension, Santa Cruz CA.

Session on Self-Similar Processes. International Statistical Institute Triannual Meeting, Tokyo, JP.

The Fractal Cosmos: History, Dynamics and Modeling (Speaker). University of California, Santa Cruz CA & Convention Center, Santa Clara CA.

Symposium on Fractal Aspects of Materials (Co-organizer and Speaker). Materials Research Society Annual Meeting, Boston MA.

- 1987-8 Année des fractales (Speaker). Ecole Polytechnique, Montréal PQ, CA.
- 1988 Semester on Complex Dynamical Systems (Speaker). Max Planck Institut für Mathematik, Bonn, DE.

Hausdorff Memorial Workshop on Fractals (Speaker). Max Planck Institut für Mathematik, Bonn, DE.

Winter Workshop on Universalities in Condensed Matter Physics. Les Houches, Haute-Savoie, FR.

Geometric Measures, Fractals, Stochastics. Friedrich Schiller U., Jena, DE.

Nonlinear Mathematics, Chaos and Fractals. National Academy of Sciences, Washington DC. Fractals. Lisbon, PT.

Symposium on Fractals in Nature and Mathematics. Istituto della Enciclopedia Italiana, Rome, IT.

Fractals in Science and Art (Speaker). University of Technology, Delft, NL.

Workshop on Scaling and Universality in Disordered Systems. Windsor ON, CA.

Random Fluctuations and Pattern Growth (Speaker). Cargèse, Corsica, FR.

Fractals and the Microcomputer (one week course). Mathematical Association of America, Salisbury MD.

Fractals: Introduction, Basics and Applications (Speaker). Siggraph '88 Annual Meeting, Atlanta GA.

Symposium on Fractals and Applications. El Escorial, ES.

Workshop on Fractals. Budapest, HU.

Computer Graphics of Fractals. University of California Extension, Santa Cruz CA.

Scaling, Fractals and Non Linear Variability in Geophysics, 2. Ecole Polytechnique, Paris, FR.

Chaos & Fractals (Short Course). American Mathematical Society, Providence RI.

Sloan Foundation Workshop on Fractals and Chaos. Union College, Schenectady NY.

Gordon Research Conference on Fractals (Speaker). Tilton School, Tilton NH.

Fractal Structures,... and Chemistry. Château-d'Oex, Vaud, CH.

Summer School on Fractals (Speaker). Erice, Trapani, Sicily, IT.

Fractals in the Natural Sciences (Speaker). Discussion Meeting at the Royal Society, London, UK.

Fractals in Geology (Speaker). Centennial Meeting of the Geological Society of America, Denver CO. *Symposium on Fractal Aspects of Materials* (Co-organizer). Materials Research Society Annual Meeting, Boston MA.

1989 *Fractals in Fracture, Dielectric Trees and Crack Growth* (Session). American Physical Society (Condensed Matter Section), Saint Louis MO.

Séminaire de mathématiques supérieures sur la géométrie fractale (Lecturer). Université de Montréal, Montréal PQ, CA.

Scaling, Fractals and Non Linear Variability in Geophysics. European Geophysical Society, Barcelona, ES.

Quantitative Measures of Complexity. Bryn Mawr PA.

Computer Graphics of Fractals: Algorithms from the Frontiers of Research. Santa Cruz CA.

Fractals and Chaos in the Natural and Social Sciences. Institute of Environmental Sciences, Miami OH.

Fractals: Analysis and Modelling. Siggraph '89 Annual Meeting, Boston MA.

Fractals. Institute of Physics, Bogota, CO.

Fractal Geometry for Material Sciences. Fine Particle Society Short Courses, Boston MA.

From Fourier to Fractals. British Society for the History of Mathematics, Cambridge UK.

Fractals in Physics (honoring BBM on his 65th birthday) (Attendee). Mas d'Artigny (Saint Paul de Vence, near Nice), FR.

Mathematical Morphology and Fractals. Society of Photo-Optical Instrumentation Engineers, Philadelphia PA.

Application of Fractals in the Rubber Industry. Paul Flory Symposium of the American Chemical Society, Detroit MI.

Fractal Concepts in Engineering Problems. American Institute of Chemical Engineers, San Francisco CA.

Symposium on Fractal Aspects of Materials. Materials Research Society Annual Meeting, Boston MA.

1990 *Minicourse on Computation and Rendering of Fractals.* Yale University, New Haven CT. *Fractals, Rules and Segments* (Session). Society of Photo-Optical Instrumentation Engineers, Newport Beach CA.

Fractals in Oil Exploration (Speaker). Lamont-Doherty Geophysical Laboratory, Palisades NY.

Fractals in Science (honoring BBM on his 65th birthday) (Attendee). Bad Neuenahr, DE. *Dynamical Systems*. SIAM, Orlando FL.

Self-Similarity, Prenormalization and Multifractality. Courant Institute, NYU, New York, NY.

Fractals in the Fundamental and Applied Sciences (Honorary Chairman; Keynote Speaker). International Federation for Information Processing & Associação Portuguesa de Informatica, Lisbon, PT.

Workshop on Strong Statistical Dependence (Speaker). Institute for Mathematics and its Applications, Minneapolis MN.

Propagation of Correlations in Constrained Systems. Cargèse, Corsica, FR.

Fractals Course. Siggraph '90 Annual Meeting, Dallas TX.

Gordon Research Conference on Fractals (Speaker). Plymouth State College, Plymouth NH.

Heterogeneous Systems: Gels....Fractals, etc... Société Française de Physique, Montpellier, FR.

Séminaire d'Introduction aux Fractales. Collège de Polytechnique, Paris, FR.

Fractal Geometry (Computers: Windows into Science). Utah State University, Logan UT.

Fractal Graphics as a New Art Form: a Workshop. Glacier Institute, Taos NM.

First National Conference on Fractals. CN.

Fractals. BB.

Fractal Techniques in Image Processing. Institution of Electrical Engineering, London, UK. Short Course on Fractals

Symposium on Scaling in Disordered Materials, Fractal Systems and Dynamics. Materials Research Society Annual Meeting, Boston MA.

1991 *Conf. Applications of Fractals and Chaos.* London, UK.

> *Special Session on Fractal and Spectral Geometry* (Speaker). American Mathematical Society, Tampa FL.

Minisymposium of Fractals in the Geosciences. Houston Geological Society, Houston TX.

On Teaching Fractals in Connecticut High Schools (Speaker). Choate-Rosemary Hall School, Wallingford CT.

Statistics, Fractals and Chaos (Speaker). Fractal Geometry and its Application in the Petroleum Industry (Short Course). American Association of Petroleum Geologists, Dallas TX.

Fractals (Speaker). American Chemical Society, Atlanta GA.

Fractals in Materials Science and Engineering. Materials Research Society Spring Meeting, Anaheim CA.

Chaos, Turbulence and Nonlinear Variability. European Geophysics Society, Wiesbaden, DE.

Scaling and multifractal structures (Union Session). American Geophysical Union, Baltimore MD.

Dynamics Fractals and Multifractals (Mini Symposium). Int'l Conference on Industrial and Applied Mathematics, Washington DC.

Fractals and Stochastic Geometry (Session). European Meeting of Statisticians, Barcelona, ES.

Self-Organization in Geological Systems (Session). Cargèse, Corsica, FR.

Physics of Inhomogeneous Materials. Miniworkshop on Nonlinearity: Fractals, Pattern Formation, etc.

Fractals, Spin Glasses and Neuron Networks International Centre for Theoretical Physics, Trieste, IT.

Introduction to Fractals (Elementary course) Fractal Modeling in 3D Computer Graphics and Imaging (Advanced course) Siggraph 1991 Annual Meeting, Las Vegas NV.

Fractal Geometry (Speaker). Regional Institute in Dynamics, Boston MA. *Growth and Scaling in Nature*. Granada, ES.

Short Course on Fractals. Symposium on Disordered Materials: Fractals, Scaling and Dynamics. Materials Research Society Annual Meeting, Boston MA.

1992 *Geometrical ... Behavior of Scaling Complex Systems*. Tucson, AZ.

Table ronde sur les fractales, …. St. Chéron, FR.

Applications of Fractals and Chaos. British Computer Society, London, UK.

Chaos, Fractals, ... in Biology and Medicine Würzburg, DE.

Fractals in Electrochemistry. Electrochemical Society, St. Louis MO.

Surface Disordering. Les Houches, FR.

Chaotic Dynamics and Fractals in Sciences. Madrid, ES.

The beauty of fractals and their applications (Speaker). Tokyo, JP.

Séminaire d'introduction aux fractales. Collège de Polytechnique, Paris, FR.

Second National Conference on Fractals (Speaker). CN.

Scaling, Fractals and Nonlinear Variability in Geophysics. European Geophysical Society, Edinburgh, UK.

Scaling, Fractals and Nonlinear Variability in Geophysics. Multifractals and Geophysics. American Geophysical Union, Montréal, CA.

L'ingénieur et les fractales/Fractals in Engineering (Speaker). Université de Montréal, Montréal, CA.

Processus Fractionnaires: Modèles et Statistiques. Université de Paris I, Paris.

Gordon Research Conference on Fractals (Speaker). Plymouth State College, Plymouth NH. *Wrinkling of Surfaces in Nonlinear Systems.* ICTP, Trieste, IT.

Fractals, Chaos and Dynamics for Mathematics Education Fermi National Laboratory, Batavia IL.

Plasma Laboratory, Princeton, NJ. Lehrerakademie, Bremen, DE.

Fractals and Disordered Systems (Speaker). Universität, Hamburg, DE. Fractals Course. Siggraph 1992 Annual Meeting, Chicago IL.

Minicolloquium on … Fractals. Société Française de Physique, Lille, FR.

Summer School on Fractals and Chaos. Universitat, Valencia, ES.

Algorithms, Dynamics and Fractals. Okayama City, JP.

Fractals and Physically Absorbed Molecular States. Chiba University, JP.

Short Course on Fractals.

Symposium on Disordered Materials: Fractals, Scaling and Dynamics. Materials Research Society Annual Meeting, Boston MA.

Chaos and Fractals. Kyoto, JP.

- 1992-3 Special year on topics including fractals. Center for Advanced Study, Royal Academy of Norge, Oslo, NO.
- 1993 *Fractals and Image Analysis in Biology and Medicine* (Speaker). CERFIM, Locarno, CH.

Pattern Formation (including Fractals). Harvey Mudd College, Claremont CA.

Non-linear Phenomena ...: Fractals Polatsk, BY.

Frontiers of Condensed Matter Physics. Bar Ilan University, IL.

Fractals and Dynamical Systems in Geosciences (1st International Symposium). Goethe University, Frankfurt/Main, DE.

Scaling, Fractals and Non-linear Variability in Geophysics. European Geophysical Society

La rugosité. Collège de Polytechnique, Paris, FR.

Random Spatial Processes. Isaac Newton Institute for Mathematical Sciences, Cambridge, UK.

Fractals, Chaos and Dynamics for Mathematics Education. Fermi National Laboratory, Batavia IL. Plasma Laboratory, Princeton NJ. Lehrerakademie, Bremen, DE.

Fractals in Natural Science (Speaker). Budapest, HU.

Fractals in the Natural and Applied Sciences. (2nd International Working Conference) IFIP and Kingston University, Surrey, UK.

Chaos et fractales (Speaker). Collège J. de Brébeuf, Montréal, CA

Hydrofractals. Short Course on Hydrofractals. Ischia, IT.

Multiscale Stochastic Processes,... Multifractals and Wavelets. IMA, Cambridge UK.

Complex Systems in Computational Physics. Buenos Aires, AR.

Symposium on Fractals in the Earth Sciences (Speaker). Geological Society of America Annual Meeting, Boston MA.

Scaling and Multifractal Processes. Cargèse, Corsica, FR.

Les fractales dans les sciences physiques, en l'honneur de BBM (Speaker). Société Française de Physique, Paris.

Third National Symposium on Theory and Applications of Fractals. Hefei, CN.

First National Conference on Chaos and Fractals in Theoretical Engineering. Rome, IT.

Processus Fractionnaires: Modèles et Statistiques. Université de Paris 1, Paris.

Sessions on Fractals (Speaker). Canadian Mathematical Society Winter Meeting, Ottawa, CA. Short Course on Fractals in Materials Science. Symposium on Disordered Materials: Fractals, Scaling and Dynamics. Materials Research Society Annual Meeting, Boston MA.

1994 Cellular Automata, Aggregation and Growth. Isaac Newton Institute for Mathematical Sciences, Cambridge, UK.

Natural Hazards Reduction. Santa Fe Institute, Santa Fe NM.

Complex Dynamical Systems ... the Mandelbrot and Julia sets. American Mathematical Society Winter Meeting, Cincinnati OH.

Mini-symposium on Fractals in Physiology and Morphology. School of Medicine, Bern, CH.

Non-linear Phenomena ...: Fractals Polatsk, BY.

Scaling, Multifractals and Nonlinear Variability in Geophysics. European Geophysical Society, Grenoble, FR.

Application of Fractals in Geoscience and Remote Sensing. European Association of Remote Sensing Laboratories, Ispra, IT.

Gordon Research Conference on Fractals (Speaker). San Miniato, IT.

L'ingénieur et les fractales/Fractals in Engineering. École Polytechnique de Montréal, Montréal, CA.

Wavelets and Fractals University of Pittsburgh, Pittsburgh PA.

Fractal and Hyperbolic Geometry .. Bordeaux, FR.

Fractal Geometry and Stochastics (Speaker). Finsterbergen, Thuringia, DE.

Lévy Flights and Related Phenomena in Physics (Speaker). Observatoire, Nice, FR.

Scaling Concepts and Complex Fluids. Catanzaro (Calabria), IT.

Fractals, Chaos and Dynamics for Mathematics Education. Plasma Laboratory, Princeton NJ. Lehrerakademie, Bremen, DE.

Nonlinear aspects of Physicochemical Phenomena. University of Girona, ES.

Size-scale effects in the failure...of materials... IUTAM. Politecnico de Torino, IT.

Fractals Course. Siggraph 1994 Annual Meeting, Orlando FL.

Statistical Problems in Fractals and Chaos (Speaker). Pennsylvania State University, University Park, PA.

Fractals Tutorial. American Association of Petroleum Geologists, Denver CO.

Fractals (Honoring BBM on his 70th birthday) (Speaker). Chubu University, Nagoya, JP. *Short Course on Fractals in Materials Science. Symposium on Fractals in Materials Science.* Materials Research Society, Annual Meeting, Boston MA.

1995 *Fractals in the Natural and Applied Sciences* (3rd International Working Conference). Marseille, FR.

Chaotic Dynamics and Fractal Geometry. Mathematical Association of America Annual Meeting, San Francisco CA.

Fractals (honoring BBM on his 70th birthday) (Attendee). Curaçao, AN.

Non-linear Phenomena ...: Fractals... Minsk, BY.

La porosité. Fluctuations extrêmes en finances: ... fractales, ondelettes (Discussant). Les fractales (Speaker). Collège de Polytechnique, Paris, FR.

Fractals and Dynamical Systems in Geosciences (2nd International Symposium). Goethe Universität, Frankfurt/Main, DE.

Ergofract 95 Meeting on Fractals, Chaos and Ergodic Theory. Las Palmas, Canary Islands, ES.

Chaos under control: a Chautaqua Course. Temple University, Philadelphia PA.

Fractal Analysis and Modeling of Materials (Speaker). Los Alamos National Laboratory, Los Alamos NM.

Fractals, Chaos and Dynamics for Mathematics Education. Lehrerakademie, Bremen, DE.

Fractals in the Classroom. Central Connecticut State University, New Britain CT. Smooth Dynamical Systems and Dimension Theory. University of Washington, Seattle WA.

Future of Fractals. IUPAP Satellite Conference, Nagoya, JP.

Fractals, Chaos and Dynamics for Mathematical Education. Boca Raton FL.

Fractals in Finance (Speaker). INRIA, FR.

Caos y fractales: el nuevo paradigma (Speaker). Fundación Ramon Areces, ES.

Annie 95 Session on Chaos and Fractals. Emerging Technologies in Medicine and Biology, St. Louis MO.

Short Course on Fractals in Materials Science. Symposium on Disordered Materials and Interfaces Fractals, Structure and Dynamics. Symposium on Fractures. Materials Research Society Annual Meeting, Boston MA.

1996 *Pattern Formation and Fractals in Science and Technology*. University of New South Wales, Sydney, AU.

> Chaos and Fractals. Mathematical Association of America Annual Meeting, Orlando FL.

Self-similarity, Renormalization and Multifractality. Courant Institute, NYU, New York NY.

Chaos Theory and the Arts and Humanities. University of Georgia, Athens GA.

Fractals in Biology and Medicine. CERFIM, Locarno, CH.

Spiel mit dem Chaos. Lehrerakademie, Bremen, DE.

Non-linear Phenomena ...: Fractals Polatsk, BY.

Fractales et Musique (Speaker). Archipel, Genève, CH.

Instabilities, Chaos and Fractals. Crystal Growth Workshop, Zürich, CH. *Multifractals: Theory and Practice. Resolution Dependence and Multifractals....* McGill University, Montréal, CA.

Making Fractals. Gateway Technical College, North Haven CT.

Gordon Research Conference on Fractals (Speaker). New England College, Henniker NH.

Long-range Dependent Processes (1/*f*). Les Houches, FR.

Chaos and Fractals in Chemical Engineering. Rome, IT.

Fractals Course. Siggraph Annual Meeting, New Orleans LA.

Chaos, Fractals and Models. Pavia, IT.

Processus à sauts et applications à la finance. Evry, FR.

Scaling Laws and Fractality in Continuous Mechanics. Udine, IT.

Scaling Phenomena with Multifractals and Wavelets. Doorn (Utrecht), NL.

Non-linear Dynamics, Chaos, Fractals and Fractal Kinetics. Congress on Biopharmaceutics and Pharmacokinetics, Athens, GR.

Altaïr (Stages Scientifiques pour Jeunes). FR.

Fractals in Chemistry. Mexican Society of Chemistry, Guanajuato, MX.

Fractal Concepts in... Surfaces and Interfaces. American Institute of Chemical Engineers, Chicago IL.

1997 Session honoring BBM (Speaker). American Finance Association Annual Meeting, New Orleans LA.

Analysis, Diffusions and PDE's on Fractals (Speaker). American Mathematical Society Annual Meeting, San Diego CA.

Scale Invariance and Beyond. Les Houches, FR.

Fractals in the Natural and Applied Sciences (4th Int'l. Working Conference). Denver CO.

La géométrie fractale: un outil pour comprendre les systèmes irréguliers. Fluctuations extrêmes en finances: ... fractales, ondelettes. Collège de Polytechnique, Paris, FR.

Scaling, Multifractals and Nonlinearity in Geophysics. European Geophysical Society General Assembly, Vienna, AT.

L'ingénieur et les fractales/Fractals in Engineering (Speaker). Arcachon, FR.

Fractals and Dynamical Systems in Geoscience (3rd Int'l. Symposium). Stará Lesná, SK.

The Dynamics of Complexity (Co-organizer). International Center for Theoretical Physics, Trieste, IT.

Fractals in Teaching (Workshop) New Haven CT.

Spiel mit dem Chaos. Lehrerakademie, Bremen, DE.

1998 Session on Chaotic Dynamics and Fractal Geometry. Mathematical Association of America Annual Meeting, Baltimore MD.

Order, Chance and Risk / Ordre, hasard et risque (Speaker). Centre de Physique, Les Houches, FR.

Fractal Biology and Chaotic Medicine (tutorial). American Physical Society March Meeting, Los Angeles CA.

Fractal Geometry and Related Topics American Mathematical Society Meeting, Louisville KY.

Spiel mit dem Chaos. Lehrerakademie, Bremen, DE.

Scaling, Multifractals and Nonlinearity. European Geophysical Society General Assembly.

Gordon Research Conference on Fractals (Speaker). Il Ciocco, Barga, IT.

Fractal Geometry and Stochastics, II. Greifswald, DE.

Complexity and Fractals in the Sciences (5th. Int'l Working Conference). Valletta, MT.

1999 *Mathematics and Applications of Fractals* (Four-month long program) (Participant). Isaac Newton Institute for Mathematical Sciences, Cambridge, UK.

Multifractals (Speaker). Isaac Newton Institute for Mathematical Sciences, Cambridge, UK.

Fractals and Differential Equations (Speaker). Isaac Newton Institute for Mathematical Sciences, Cambridge, UK.

Scaling, Multifractals and Nonlinearity in Geophysics European Geophysical Society General Assembly, The Hague, NL.

Fluctuations extrêmes en finance: fractals, ondelettes. Collège de Polytechnique, Paris, FR.

Linguaggi estetici nell'attività frattalista. Musis, Università degli Studi, Rome, IT.

Spiel mit dem Chaos. Lehrerakademie, Bremen, DE.

Fractals in Engineering / L'ingénieur et les fractales. Delft, Netherlands.

Teaching Chaos and Fractals Using Technology. Gateway Community Technical College, North Haven CT.

Chaotic Dynamics and Fractals in the Sciences. Madrid, ES.

Scaling Phenomena in Communications Networks (Speaker). Institute for Mathematics and its Applications, Minneapolis MN.

2000 *Complexity and Fractals in the Sciences* (6th. Int'l Working Conference). SG.

Fractals in Biology and Medicine III (Speaker).

Short course: Introduction to Scaling, Fractals, and Multifractals in Geophysics. Scaling, Multifractals and Nonlinear Variability in Geophysics (Speaker). European Geophysical Society General Assembly, Nice, FR.

Fluctuations extrêmes en finance. Collège de Polytechnique, Paris, FR.

Bridges. Winfield KS.

Spiel mit dem Chaos. Lehrerakademie, Bremen, DE.

Fractal Geometry: a Summer Workshop (Co-organizer and speaker) Yale University, New Haven CT. *Applications of Fractals using Technology.* (Speaker). Gateway Community Technical College, North Haven CT.

Fractal Geometry : Mathematical Techniques, Algorithms and Applications. An Introduction to Fractal Geometry and its Applications. The Institute of Mathematics and its Applications, De Montfort U., Lancaster, UK.

New Trends on the Fractal Aspects of Complex Systems (FACS 2000). International Union of Pure and Applied Physics. U. Federal de Alagoas, BR.

Scaling and the Extremes in Geophysical Fields. American Geophysical Union, San Francisco CA.

2001 Fractals in Multimedia.

Institute for Mathematics and its Applications, Minneapolis MN.

Fractals and Dynamical Systems. Chinese University. Hong Kong, CN.

Chaotic Dynamics and Fractal Geometry. Mathematical Association of America Annual Meeting, New Orleans LA. Fractals in Engineering. Rome, IT.

Fractals in Graz 2001: Stochastics-Analysis-Dynamics-Geometry. Technical University, Graz, AT.

Spiel mit dem Chaos. Lehrerakademie, Bremen, DE.

Fluctuations extrêmes en finance. Collège de Polytechnique, Paris, FR.

Short course: Introduction to Scaling, Fractals, and Multifractals in Geophysics. Scaling, Multifractals and Nonlinear Variability in Geophysics. European Geophysical Society General Assembly.

Ondelettes et fractales. Monastir, TN.

Fractal Geometry, Number Theory, and Dynamical Systems (Speaker). Société Mathématique de France and American Mathematical Society. École Normale Supérieure, Lyon, FR.

Fractals. American Mathematical Society Meeting, Columbus OH.

Fractal Geometry: an Advanced Summer Workshop (Co-organizer and speaker). *Fractal Geometry: a Summer Workshop* (Co-organizer and speaker). Yale University, New Haven CT.

Random Fractals Conference.

Créteil, FR.

Spiel mit dem Chaos. Lehrerakademie, Bremen, DE.

Fractal Structures and Self-Organization. Satellite to STATPHYS 21. La Habana, CU.

Bridges. Winfield KA.

Pattern Formation and DLA. University of Michigan, Ann Arbor MI.

Scaling and Fractals in Geophysics: In Honor of Mandelbrot's Jubilee (Speaker). American Geophysical Union Annual Meeting, San Francisco CA.

- 2001/2 Probability and Conformal Mappings (Speaker). Institut Mittag-Leffler, Djursholm, SE.
- 2002 *Fractal Geometry and Applications: A Jubilee of Benoit Mandelbrot* (Speaker). American Mathematical Society Annual Meeting, San Diego CA.

Long-range Dependent Stochastic Processes and their Applications (Speaker by video). Indian Institute of Science, Bangalore, IN.

Short Course: Introduction to Scaling, Fractals, and Multifractals in Geophysics. Scaling, Multifractals, and Nonlinear Variability in Geophysics. European Geophysical Society General Assembly, Nice, FR.

Fractal 2002: Complexity and Fractals in the Sciences. Granada, ES.

Spiel mit dem Chaos. Lehrerakademie, Bremen, DE.

Aléa et autosimilarité. Orléans, FR.

Autosimilarité et applications. Clermont-Ferrand, FR.

Conference on Analysis and Probability of Fractals. Cornell University, Ithaca NY.

Fractal Geometry and Applications. Satellite Conference of the Int'l Congress of Mathematicians, Nanjing, CN.

Fractal Geometry: an Advanced Summer Workshop (Co-organizer and speaker). *Fractal Geometry: a Summer Workshop* (Co-organizer and speaker). Yale University, New Haven CT. Pedofract 2002; IV Seminario de Fractales. Soil and Heterogeneous Systems. El Barco de Ávila, ES.

Fractales en physique (Speaker). Société Française de Physique, Orsay, FR.

Conference on... Analysis on Fractals. Umeå, SE.

Fractals in Space, on Earth, and in Mathematics (Speaker). University of Lund, SE.

2003 *Fractals, Networks, and Power Laws in Medicine.* Winnipeg, CA.

Fractal Geometry and Stochastics, III. Friedrichroda, DE.

Fractals in Mathematics. Wuhan, CN.

Short Course: Introduction to Scaling, Fractals, and Multifractals in Geophysics. Scaling, Multifractals, and Nonlinear Variability in Geophysics. European Geophysical Society General Assembly, Nice, FR. Non-Linéarités. Académie d'Agriculture, Paris, FR.

Lévy Processes in Finance. École polytechnique, Palaiseau, FR.

Lévy Processes: Theory and Applications. Institut Henri Poincaré, Paris, FR.

Fractal Geometry: an Advanced Summer Workshop (Co-organizer and speaker). *Fractal Geometry: a Summer Workshop* (Co-organizer and speaker). Yale University, New Haven CT.

Fractals, Power Laws, and Other... Data Mining Tools (Speaker) ACM SIGKDD Int'l Conference, Washington DC,

Fractals, Chaos, and Nonlinear Dynamics Kalyanapuram, Tiravannamalai, IN.

Fractals in Hydrosciences. Monte Verita, Ascona-Locarno, Ticino, CH.

Complexity and Criticality. Niels Bohr Institut, Copenhagen, DK.

Chaos and Multifractals in the Atmosphere ... and Climate. American Geophysical Union Fall Meeting, San Francisco CA. *Symposium on Fractals in Archaeology,* Annual Meeting of the Society for American Archaeology, Milwaukee WI.

2004 *Fractals* (Black History Month). Morehouse College, Atlanta, GA.

> *Fractals in Biology and Medicine* (IV Int'l Symposium) (BBM's 80th birthday). Monte Verita, Ascona-Locarno, Ticino, CH.

Fractal Foundations for Architecture and Design (BBM's 80th birthday). Madrid, ES.

Fractal 2004. Complexity and Fractals in Nature (BBM's 80th birthday, Speaker). Vancouver BC, CA.

Short Course: Introduction to Scaling, Fractals, and Multifractals in Geophysics. Scaling, Multifractals, and Nonlinear Variability in Geophysics. European Geophysical Society General Assembly, Nice, FR.

Fractals and Dynamic Systems in Geoscience (BBM's 80th birthday, Speaker). Technische Universität, München, DE.

Lois de puissance en probabilité et statistique. Centre Int'l de Recherches Mathématiques, Luminy, FR.

Scaling, Fractals,... throughout the Geosciences American and Canadian Joint Meeting, AGU and CGU, Montreal, CA.

Fractal Analysis for Natural Hazards Int'l. Geological Congress, Firenze, IT.

Fractal Geometry: an Advanced Summer Workshop (Co-organizer and speaker). *Fractal Geometry: a Summer Workshop* (Co-organizer and speaker). Yale University, New Haven CT.

Queuing Theory and Teletraffic Theory (Speaker). Institut Mittag-Leffler, Djursholm, SE.

Wama: Wavelets and Multifractal Analysis. Cargèse, Corse, FR.

Fractales en progrès (BBM's 80th birthday). Paris, FR.

The Working Fractal (BBM's 80th birthday, Speaker). Int'l Center for Theoretical Physics, Trieste, IT.

Chaos and Multifractals in the Atmosphere ... and Climate. American Geophysical Union Fall Meeting, San Francisco CA.

2005 Scaling Laws in Fracture: Physics and Engineering Perspectives. (BBM's 80th birthday, Speaker) Eleventh Congress on Fracture. Politecnico, Torino, IT. Short Course: Introduction to Scaling, Fractals, and Multifractals in Geophysics. Scaling, Multifractals, and Nonlinear Variability in Geophysics. European Geosciences Union General Assembly, Wien, AT.

Fractals in Engineering. Tours, FR.

Second colloque: auto-similarité et applications. Toulouse, FR.

WEHIA Conference (Fractal Finance Session for BBM's 80th birthday, Speaker.) University of Essex, UK.

Fractal Geometry: an Advanced Summer Workshop (Co-organizer and speaker). *Fractal Geometry: a Summer Workshop* (Co-organizer and speaker). Yale University, New Haven CT.

Heavy Tails and Stable Paretian Distributions in Macroeconomics and Finance. (BBM's 80th birthday, Speaker). Deutsche Bundesbank, Eltville, DE.

2006 *Fractal 2006. Complexity and Fractals in Nature*. Wien, AT.

Scale-invariance and Scale-dependence in Earth... British Geophysical Association. UK.

Stochastic Processes and Random Fractals. Université de Lille, FR.

Short Course: Introduction to Scaling, Fractals, and Multifractals in Geophysics. Scale, Scaling, and Nonlinear Variability in Geosciences. European Geosciences Union General Assembly, Wien, AT.

Special Sessions on Fractal Geometry: Dynamics, Geometric Measure Theory and ... American Mathematical Society, Western Section Meeting, San Francisco CA.

Special Sessions on Fractals and Partial Differential Equations. Society of Industrial and Applied Mathematics, Boston MA.

Journées fractales. Université Blaise Pascal, Clermont-Ferrand, FR.

Multifractals, Self-similarity and Nonlinear Dynamics in the Failure Process. First European Conference on Earthquake Engineering and Seismology, Genève, CH.

Special Sessions on Analysis and Probability on Fractals. American Mathematical Society, Eastern Section Meeting, Storrs CT.

20 Years of Nonlinear Dynamics in Geosciences. Aegean Conferences, Rhodes, GR.

Understanding Geophysical Processes Using Fractals. American Geophysical Union Fall Meeting, San Francisco CA. 2007 *Special Sessions on Chaos and Fractals.* Mathematical Association of America, Annual Meeting, New Orleans LA.

Mandelbrot e la geometria frattale quaranta anni dopo. Messina (Sicilia), IT.

Short Course: Introduction to Scaling, Fractals, and Multifractals in Geophysics. Scaling, Multifractals, and Nonlinear Variability in Geophysics. European Geosciences Union General Assembly, Wien, AT.

Spatial and Temporal Scaling in Earth and Space Sciences: Forecasting, American Geophysical Union, Joint Assembly, Acapulco, MX.

Fractals and Related Fields (Mathématiques autour des fractales). Monastir TN.

2008 *Scale, scaling and nonlinear variability in space-time precipation....* American Geophysical Union Fall Meeting, San Francisco CA.