

# Curriculum vitae

January 1 2012.

## 1 Personal data

**Name:** Stefano RUFFO

**Date of Birth:** May 13, 1954.

**Place of Birth:** Agliana, Pistoia, Italy.

**Nationality:** Italian

**Citizenship:** Italian

**Status:** Married, two children (1983, 1988).

**Permanent address:** Via Fonda di Figline 31, Prato, Firenze, Italy.

**Institutional address:** Dipartimento di Energetica, Università di Firenze, Via Santa Marta 3, I-50139 FIRENZE Italy,

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## 2 Current research interests

Relaxation to equilibrium in coupled non-linear oscillators.

Boundary excitations of nonlinear lattices.

Thermal excitation of breathers.

Collective motion and ensemble inequivalence in systems with long-range interaction.

## 3 Achievements

My main research fields are statistical physics and dynamical systems theory. The first paper of mine which had an impact on the international community was the study of the relaxation to equilibrium in the Fermi-Pasta-Ulam (FPU) chain of coupled oscillators. In 1983-85 I performed pioneering numerical simulations which have shown in the clearest way the presence of a threshold from slow to fast relaxation to energy equipartition: the phenomenon has turned out to be present in a large class of coupled oscillator systems.

This early success has marked all my following research activity on the dynamics of systems with many degrees of freedom. Let us quote in time order: the study of the thermodynamic limit of the spectrum of Lyapunov exponents (an early investigation, whose value is nowadays recognized in the modern theory of non equilibrium statistical mechanics); the study of the scaling properties of the Lyapunov spectrum for symplectic coupled maps and for products of random matrices; the study of the transient chaotic motion of coupled map lattices.

In the early 90's I applied the theory of nonlinear resonances to a chain of coupled pendula, which motivated my later studies of the scaling with system size of the relaxation time to equipartition. Along this line, the most important result concerns the realization

that the relaxation time to equipartition is an intensive quantity (it does not scale with system size) and grows with a power-law at small energies.

Dynamical chaos is a source of diffusive motion, which has been studied often in connection with Chirikov's standard map. I obtained scaling formulas for the extremely small diffusion constant in the vicinity of an invariant orbit of this map.

When quantum corrections are taken into account, diffusion stops and one reaches a localized regime, very similar to Anderson localisation. I have obtained results for the dynamical spreading and localization of the wave function for both a model of kicked rotors and a model of band random matrices.

On the Anderson localisation model itself, I have developed a method for the calculation of the localisation length based on a mapping of the model onto a kicked oscillator.

An important line of research has begun with a paper on the FPU model where a full class of periodic and quasi-periodic exact solutions was found. This discovery has led mathematicians to prove the applicability of Kolmogorov-Arnold-Moser theory to the FPU model. When studying the destabilization process of one of these solutions (the zone boundary mode), I discovered a phenomenon of energy localisation into a single "chaotic breather". This process of energy localization has been found for a variety of models and for different initial conditions, showing a wide generality. It has also been found relevant for localization of energy in proteins.

Let us now come to my main current field of research, systems with long-range interactions. Stimulated by discussions with plasma physicists in the early 90's, I have introduced a model which has become a prototype of systems with long-range interactions, the so-called Hamiltonian Mean Field (HMF) model. Inspired by numerical simulations of this model and some of its variants, I arrived at reviving the concept of ensemble inequivalence, which has dramatic consequences on macroscopic properties of systems with long-range interactions: negative specific heat, temperature jumps, broken ergodicity.

### **3 University and professional training**

-Degree in Physics at the University of Florence on June 27 1977, discussing a Thesis on *Foundations of Quantum Mechanics* with Profs. A. Baracca and G. Toraldo di Francia.

-Fellowship of the National Institute of Nuclear Physics (1978-1981) at the University of Pisa, Department of Physics, with Prof. A. Di Giacomo.

### **4 Positions**

-December 1981, University Researcher at the University of Pisa (Italy), Department of Physics.

-February 1984, University Researcher at the University of Florence (Italy), Department of Physics

-November 1987, Associate Professor of Structure of Matter, University of Basilicata (Italy), Department of Chemistry.

-November 1991 to February 2001, Associate Professor of General Physics, University of Florence, Department of Energy.

- March 1991 to October 2001, Associate Professor of Experimental Physics, University of Florence, Department of Energy.
- November 1991 to present, Associate Professor of Condensed Matter Physics, University of Florence, Department of Energy.
- March 2006, promoted to Full Professor (SISSA, Trieste).
- December 2010, called as a Full Professor of Condensed Matter Physics at the Faculty of Engineering, University of Florence.

## 5 Visiting positions

- British Council Fellow at Birkbeck College (with Prof. D. Bohm) and at the Department of Theoretical Physics of Oxford University (with Prof. C. Llewellyn-Smith), October-December 1978.
- British Council Fellow at the Department of Theoretical Physics of Edinburgh University, Scotland (with Prof. D. Wallace), September-October 1981.
- Invited Professor at the University of Marseille, Center for Theoretical Physics and IMT, Equipe Turbulence Plasma: Sept-Oct 1986, May-June 1987, June 1988, June 1989, November 1991, January-February 1993, July 1995.
- Visiting Professor at Department of Physics, Rockefeller University, NY, October 1990.
- Visiting Professor, Department of Physics, Wuppertal University, March 1994.
- Invited Professor at the University of Toulon, April-July 1994.
- Invited Professor at the University of Berkeley, Electronic Research Laboratory and Electrical Engineering and Computer Science Department, July-August 1994.
- Invited Researcher at CNRS, Laboratoire de Physique Quantique, Toulouse, January-March 1995.
- Invited Professor, Centro Internacional de Ciencias, Cuernavaca, Mexico, March, July-August 1997.
- Invited researcher CNRS, Laboratoire de Physique, Ecole Normale Supérieure, Lyon, France, October-December 1998.
- Invited Professor, Laboratoire de Physique, Ecole Normale Supérieure, Lyon, France, Nov-Dec 1999.
- Invited Researcher, Laboratoire de Physique, Ecole Normale Supérieure, Lyon, France, April-June 2002.
- Invited Professor, Centre de Physique Théorique, Université de Aix-Marseille II, Marseille, France, April 2003.
- Invited Professor, Laboratoire de Physique, Ecole Normale Supérieure, Lyon, France, June-September 2004.
- Invited Researcher, Laboratoire de Physique, Ecole Normale Supérieure, Lyon, France, November 2004-January 2005.
- Invited Researcher, Newton Institute, Cambridge UK, January 2006.
- Invited Professor (Japan Society for the Promotion of Science grant), Kyoto University, May-June 2006.
- Invited Professor, Kyoto University, 3-17 January 2008.
- Invited professor, CPT-CNRS, Marseille, November-December 2008.

- Invited professor, Univ. de Grenoble and ENS-Lyon, France (october 2009- march 2010).
- Invited professor, Univ. P. Sabatier, Toulouse, France, september 2010.
- Weston visiting professor, The Weizmann Inst. of Science (2010-2011)
- Chaire d'excellence, ENS-Lyon (2011-2012)

## 6 Teaching

- Structure of Matter*, 4<sup>th</sup> year students in Chemistry, University of Basilicata, Faculty of Science, 1987/1988, 1988/1989, 1989/1990, 1990/1991.
- General Physics, Mechanics, Fluid Dynamics and Thermodynamics*, 1<sup>st</sup> year students in Electronic Engineering, University of Florence, Faculty of Engineering, 1990/1991, 1992/1993, 1993/1994, 1994/1995.
- General Physics, Electromagnetism and Optics*, 2<sup>nd</sup> year students in Electronic Engineering, University of Florence, Faculty of Engineering, 1991/1992.
- General Physics, Electromagnetism and Optics*, 2<sup>nd</sup> year students in Environmental Engineering, University of Florence, Faculty of Engineering, 1995/1996, 1996/97, 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007.
- General Physics, Mechanics, Fluid Dynamics and Thermodynamics*, 1<sup>st</sup> year students in Environmental Engineering, University of Florence, Faculty of Engineering, 1997/98, 1998/99, 1999/2000, 2000/2001, 2001/2002.
- General Physics, Mechanics, Fluid Dynamics and Thermodynamics*, 1<sup>st</sup> year students in Computer Science, University of Florence, Faculty of Engineering, 2006/2007, 2007/2008, 2011/2012.
- General Physics, Electromagnetism and Optics*, 1<sup>st</sup> year students in Computer Science, University of Florence, Faculty of Engineering, 2010/2011, 2011/2012.
- Dynamical systems*, 4<sup>th</sup> year students in Automation Engineering, University of Florence, Faculty of Engineering, 2005/2006, 2006/2007, 2007/2008.
- Dynamical systems*, PhD Schools in Physics and in Complex Systems, University of Florence 1995/96, 2001/2002, 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/2008.

## 7 PhD students

**Physics** Franco Bagnoli (1997) *Discrete dynamics* Université P. e M. Curie, Paris; Luca Tessieri (1998), *Diffusion and localization in quantum mechanics*; Maria Barbi (1999), *Helicoidal model of the nonlinear dynamics of DNA*; Pierre de Buyl (2010), Bruxelles, *Vlasov equation*; Aurelio Patelli, Florence, *Response theory in long-range systems*.

**Material Science and Technology** Maria Zei, *Fracture of heterogeneous materials*, (2001) with ENS-Lyon.

**Nonlinear dynamics and complex systems** Julien Barré (2003), *Systems with long-range interactions*, with ENS-Lyon; Mathias Perrin (2003) *Recoil effects in cavity lasers*, with INLN, Nice; Andrea Antoniazzi *Dynamics of the free electron laser*; Pietro Lió (2010), Florence, *Spatial evolution of epidemics*; Fausto Baroncini (2010), Florence, *Kalman filters and hydrologic data analysis*.

## 8 Member of PhD Jury

- Mickael Antoni, "Dynamique microscopique des plasmas: de N corps á M modes et N particules", Université de Provence, November 1993.
- Didier Benisti, "Validité de l'équation de diffusion en dynamique Hamiltonienne", Université de Provence, October 1995.
- Elena Floriani, "Caos debole e diffusione anomala", Università di Pisa (1995).
- Xavier Leoncini, "Dynamique Hamiltonien du modèle XY", Université de Provence, October 1998.
- Thierry Cretegy, "Dynamique collective et localisation de l' énergie dans les réseaux non linéaires, ENS-Lyon, December 1998.
- Mario Annunziato, "Equilibrio non-canonico e distribuzioni di Lévy", Università di Pisa (2000).
- Annamaria Morgante, "Multibreathers et ondes stationnaires dans des systèmes discrets non linéaires, Ecole Polytechnique, September 2001.
- Freddy Bouchet, "Mécanique statistique pour des écoulements géophysiques", Institut J. Fourier, Grenoble, October 2001.
- Jury d'habilitation à diriger les recherches de J.-A. Sépulchre, Nice, July 2003. Rapporteur.
- Hugo Touchette, "Théorie des grandes déviations et non équivalence d'ensembles", Mac-Gill University, Montreal, Canada, October 2003.
- Sandro Marcel Wimberger, "Chaos and localization : quantum transport in periodically driven atomic systems", Muenchen, Ludwig Maximilians Universitaet, January 2004.
- Frédéric Douarche, "Fluctuations du travail et de la chaleur dans des systèmes mécaniques hors d'équilibre", ENS-Lyon, November 2005.
- Jury d'habilitation à diriger les recherches de Cristel Chandre, Marseille, May 2006. Rapporteur.
- Julien Sopic, "Dynamique de marcheurs aléatoires en interaction", IRSAMC Université Paul Sabatier, Toulouse, June 27 2007. Rapporteur.
- Jury d'habilitation à diriger les recherches de Alessio Guarino, Nice, September 2007. Rapporteur.
- Brice Juanico, ENS-Lyon, "Localization of energy in proteins", december 20 2007.
- Jury d'habilitation à diriger les recherches de Marco Pettini, Marseille, February 2008.
- Jury d'habilitation à diriger les recherches de Mickael Antoni, Marseille, June 12 2008.
- Jury d'habilitation à diriger les recherches de Julien Barré, Nice, February 2 2011.
- Tirawut Worrakitpoonpon, "Relaxation of isolated self-gravitating systems in one and three dimensions", UPMC, Paris, june 28 (2011).
- Jury d'habilitation à diriger les recherches de Eric Bertin, Lyon, November 15 (2011).
- Alain Olivetti, "Effets collectifs et particules en interaction: des systèmes à longue portée aux atomes froids", Laboratoire Jean Dieudonné, Nice, december 6 (2011).

## 9 Teaching organizational activities

- Member of the council of teachers of the PhD School in material science, Florence University (1993-99).

- Member of the council of teachers of the PhD School in nonlinear dynamics and complex systems, Florence University (1999-). Since 2011, coordinator of the program.
- In charge of Socrates-Erasmus exchanges for the Faculty of Engineering (1998-). Organizer of intensive teaching programs in collaboration with ENS-Lyon and Max-Planck Institute for Complex Systems (Dresden) (2000 and 2003).

## 10 Research administration

- Member of the organization committee of the workshop *Chaos and Complexity*, ISI, Torino 5-11 Ottobre 1987.
- Member of the scientific committee of the program "Chaos and Complexity", Institute for Scientific Interchange (ISI, Torino, Italy) from 1990 to 1996.
- Member of the scientific committee of the school "Complexity and Evolution", Les Houches, France, March 6-15 1990.
- Scientific manager of the program of dynamical systems of the "Laboratorio Forum" of theoretical physics of INFN (1993-1996). Organization of three workshops on *Statistical Methods in Space-Time Chaos* in Prato.
- Member of the scientific committee of the "Latin American Workshop on Nonlinear Physics", Cocoyoc, Mexico, July (2001).
- Member of the organizing committee of the CECAM Workshop "Single Particle Studies: from the experiments to their analysis", Lyon, France, September (2001).
- Member of the organizing committee of the CECAM Workshop "DNA: from sequence to function", Lyon, France, September (2001).
- Member of the organizing committee of the Les Houches workshop "Dynamics and thermodynamics of systems with long-range interactions", 18-22 February (2002).
- Member of the International Scientific Committee of the International Conference "Unsolved problems of noise", June 6-9 (2005), Gallipoli, Italy.
- Member of the organizing committee of the ESF-Stochdyn Conference "Fluctuations and noise in out of equilibrium systems", Nice, France, September 14-16 (2005).
- Member of the organizing committee of the International Seminar and Workshop "Extreme events in complex dynamics", October 23- November 2 (2006), Max-Planck Institute for Complex Systems, Dresden, Germany.
- Member of the program committee of the Workshop "Chaos, Complexity and Transport: Theory and Applications", June 4-8 (2007), Le Pharo, Marseille.
- Member of the organizing committee of the Workshop "Dynamics and thermodynamics of systems with long-range interactions: Theory and Experiment", Statphys23 Satellite, July 4-7 (2007), Domus Pacis, Assisi.
- Member of the organizing committee of the ESF-Stochdyn Conference "Fluctuations and noise in out of equilibrium systems", Nice, France, September 3-7 (2007).
- Member of the organizing committee of the les Houches Summer School "Long-range interacting systems", August 2008, with L. Cugliandolo and T. Dauxois.
- Member of the Steering Committee of Statphys24 (2010).
- Member of the International Advisory Committee of SIGMAPHI11 (2011).

## 11 Research contracts

- Research attachment to Istituto Nazionale di Fisica Nucleare from 1978. leader of the project, *Statistical mechanics and dynamical systems* from 1980 to 1998.
- In charge of the *Vigoni* program of scientific exchange with the Max-Planck group of Potsdam led by Arkady Pikovsky, (1995-97).
- Local manager of the EU Network *Stability and Universality in Classical mechanics*, led by G. Gallavotti (1996-97).
- Scientific responsible of the exchange program Mexico-Italy (1986-92).
- Local manager of the project "Chaos and localization in classical and quantum mechanics", Italian Ministry of Education and Research (PRIN) (2001/2002).
- Local manager of the project "Order and chaos in extended nonlinear systems", Italian Ministry of Education and Research (PRIN) (2004/2005).
- National manager of the project "Dynamical and statistical properties of systems with long-range interactions", Italian Ministry of Education and Research (PRIN) (2006/2007).
- Local manager of the project "Statistical physics of strongly correlated systems at and out of equilibrium", Italian Ministry of Education and Research (PRIN) (2008/2010).

## 12 Responsibilities

- Member of the evaluation committee of the Ecole Normale Supérieure de Lyon, 12 September 1995.
- Referee of scientific projects for: The Third World Academy of Sciences, Soros Foundation, European Community TMR program.
- Scientific director of the school "Dynamical modeling in Biotechnology" (ISI, Torino), funded by the European Commission, Biotechnology Program, May-June 1996.
- Member of the evaluation committee of the biotechnology program of the European Commission, October 1996.
- Member of the "Commission des Specialistes" of the Ecole Normale Supérieure de Lyon, Laboratoire de Physique (2004,-).
- Referee of: Journal of Physics A, Journal of Statistical Physics, Physical Review E, Physical Review Letters, Nuclear Physics B, Physics Letters A, Physica A, Physica D, Il Nuovo Cimento, Chaos, Journal of Biological Physics.
- Member of the Advisory Board of **Physica A** (Elsevier), (2001-).
- Member of the Editorial Board of **Journal of Biological Physics** (Kluwer-Springer) (2000-2008).
- Editor of **Communications in Nonlinear Science and Numerical Simulations** (Elsevier), (2005-).
- Member of the C3 Commission (Statistical Physics) of the IUPAP (October 2008-October 2014). Chairman of the Commission since November 2011. Vice-president of IUPAP since November 2011.
- Member of the Italian Physical Society since 1994; member of the New York Academy of Sciences from 1995 to 1999; member of the "Unione degli Scienziati per il Disarmo".
- President of the scientific council of CNISM, Italy since 2011.

### 13 Post-docs tutor

- Scientific tutor of the Florence University post-doc Alessandro Torcini (1997-98).
  - Scientific tutor of the Florence University post-doc Stefano Lepri (1999-2003), project funded by INFN and EU under the Network LOCNET.
  - Scientific tutor of the Florence University post-doc Freddy Bouchet (2001-2002), project funded also by the Italian Ministry for Education and Research and by the Fondation Lavoisier.
  - Scientific tutor of the post-doc Yoshiyuki Yamaguchi, project funded by the Japan Ministry for Research, Education and Sports (July 2002-January 2003)
  - Scientific tutor of the post-doc Piero Cipriani, project funded by the Italian ministry for Education and Research (2004).
- Scientific tutor of the EU post-docs:
- Holger Kantz (1989), *Science* program.
  - Mickael Antoni (July 94-July 95), *HCM* program.
  - Thierry Dauxois (September 96-January 97), *TMR* program, *Marie-Curie Fellow*.
  - Marie-Christine Firpo (November 2000-October 2001), *Marie-Curie Fellow*.
  - Ramaz Khomeriki (December 2005-November 2006), *Marie-Curie Fellow*.
  - Athanasios Manos (2009), PRIN Fellowship, Lyapunov exponents and long-range interactions.

### 14 Invited speaker at meetings (selected)

- September 1985, *Tercera Escuela de Fisica Estadistica*, Oaxtepec, Mexico, organized by G. Martinez-Mekler and R. Rechtman.
- May 1986, *Fluid Motion and Turbulence*, Meeting of the Accademia dei Lincei, Rome, organized by G. Gallavotti.
- June 1986, *Advances on Phase Transitions and Disordered Phenomena*, Amalfi, Italy, organized by M. Marinaro and G. Busiello.
- July 1986, *Fractals: Materials and Dynamics*, IBM Europe Institute, Oberlech, Austria.
- June 1987, *Italo-Soviet Meeting on Statistical Mechanics*, Como, Scientific Center A. Volta, organized by G. Casati.
- September 1987, *Measures of Complexity*, Rome, organized by L. Peliti.
- October 1987, *Chaos and Complexity*, ISI, Torino, organized by M. Rasetti.
- March 1988, *Universalities in Condensed Matter*, Les Houches Winter School, organized by R. Jullien.
- July 1988, *Dynamics Days*, Dusseldorf, organized by G. Eilenberger.
- August 1988, *New trends in Non-linear Dynamics and Pattern-Forming Phenomena: the Geometry of Nonequilibrium*, Cargese Summer School, organized by P. Couillet and P. Huerre.
- August 1988, *Molecular Dynamics and Dynamical Systems*, CECAM Meeting, Orsay France, organized by G. Ciccotti and W. Hoover.
- September 1988, *Computer Simulations of Cellular Automata*, CECAM Meeting, Orsay France, organized by H. Herrmann.



- January 1989, *XVIII Statistical Physics Winter Meeting*, Oaxtepec, Mexico, organized by A. Gonzalez.
- March 1989, *Cellular Automata and Modeling of Complex Physical Systems*, Les Houches Winter School, organized by P. Manneville and G. Vichniac.
- June 1989, *Cellular Automata in Physics and Chemistry*, University of Mons, Belgium, organized by B. Sente and R. Dagonnier.
- August 1989, *Modeling of Complex Microscopic Flows*, Free University of Bruxelles, organized by M. Mareschal.
- September 1989, *Cellular Automata 89*, Los Alamos National Laboratory, organized by H. Gutowitz.
- March 1990, *Complexity and Evolution*, Les Houches Winter School, organized by J.P. Nadal, R. Livi and N. Packard.
- January 1992, *Turbulence and spatially extended systems*, Les Houches Winter School, organized by, J.L. Basdevant, S. Ciliberto and R. Benzi.
- June 1992, *Dynamics Days*, Poznan Poland, organized by P. Pieranski and G. Eilenberger.
- August 1992, *Physics Computing 1992, EPS General Conference*, organized by the Computational Physics Section of the European Physical Society.
- June 1993, *Quantum and Classical Chaos*, Como, organized by G. Casati.
- April 1994, *Bifurcation theory and chaos*, Ketsively, Ukraine, organized by Y. Maistrenko.
- September 1994, *Complexity and Chaos*, Lisbon, organized by R. Vilela-Mendes and R. Lima.
- June 1995, *Lattice Dynamics*, Paris, organized by M. Courbage and H. Chaté.
- September 1995, *Stochastics, Complexity and Chaos*, Marseille, organized by R. Lima.
- February 1996, *Chaos and disorder in spatially extended system*, Dresden, organized by H. Kantz and R. Livi
- September 1996, *Hyperbolic systems with singularities*, The Erwin Schroedinger International Institute for Mathematical Physics, Vienna, organized by P. Choquard, D. Szasz and C. Liverani.
- October 1996, *Automates cellulaires et fonctions couple'e sur re'seau applique's aux syste'mes e'cologiques*, Les Houches, organized by A. Franc P.-H. Guyon and G. Weisbuch.
- December 1996, *V Escuela del Verano en Sistemas Complejos*, Santiago del Chile, organized by E. Goles and S. Martinez.
- April 1997, *V Foundations of Physics and Frontiers of Knowledge*, SISSA, Trieste, organized by G.C. Ghirardi.
- September 1997, *Disorder and Chaos*, Roma, organized by A. Vulpiani (in honour of Giovanni Paladin).
- July 1998, *Localized excitations in condensed matter and molecular physics*, Lyon, France, organized by M. Peyrard and A.J. Sievers.
- July 1998, *Classical chaos and its quantum manifestations*, Toulouse, France, organized by J. Bellissard and D. Shepelyansky.
- February 1999, *The Chaotic Universe*, Rome, Italy, ICRA workshop organized by V. Gurzadyan and R. Ruffini.
- October 1999, *Theory in immunology*, Bielefeld ZIF, Germany, organized by F. Celada.

- December 1999, *Chance in physics: foundations and perspectives*, Ischia, Italy, organized by SIFF and ISAS.
- April 2000, *International workshop on classical and quantum complexity and nonextensive thermodynamics*, Denton, University of North Texas, organized by P. Grigolini and C. Tsallis.
- June 2000, *Chaotic transport and Complexity*, Marseille, France, organized by S. Benkadda and G. Zaslavsky.
- June 2000, *Marcell Grossmann Meeting*, Roma, Italia, organized by da V.G. Gurzadyan and R. Ruffini.
- July 2000, *Statistical Mechanics and Space-Time Chaos*, Dresden, Germania, organized by R. Livi and A. Politi.
- October 2000, *Fractal Aspects of Complex Systems, IUPAP Conference*, Maceiò, Brasile, organized by Marcelo Lyra.
- May 2001, *Non-extensive statistical mechanics*, Cagliari, Italia, organized by M. Lissia.
- October 2001, ICRA Workshop *Fermi and Astrophysics*, Roma-Pescara, Italia, organized by V. Gurzadyan and R. Ruffini.
- February 2002, CICC Workshop *Chaos in few and many body problems*, Cuernavaca, Messico, organized by T. Seligman.
- June 2002, Workshop *Chaotic transport and complexity in classical and quantum systems*, Marseille, Francia, organized by S. Benkadda and G. Zaslavsky.
- July 2002, Conference and School at ICTP *Space-time chaos*, organized by H. Chaté, R. Kapral and S. Kusnetsov.
- May 2003, Rutgers Meeting on Statistical Mechanics, organized by Joel Lebowitz.
- August 2003, *Dynamical chaos in classical and quantum physics*, 75-th birthday of Boris Chirikov, Novosibirsk, organized da F. Izrailev.
- September 2003, *Kolmogorov's legacy in physics*, ICTP Trieste, organized by F. Benatti et al..
- November 2003, *Vlasovia*, Nancy, Francia organized da F. Califano e G. Manfredi.
- May 7-8 2004, *Fermi-Pasta-Ulam, fifty years after*, Rome University, organized by G. Gallavotti.
- June 2004, *Chaotic transport and chaos*, Carry Le Rouet, France organized by G. Zaslavsky and S. Benkadda.
- June 6-10 2005, *Unsolved problems of noise and fluctuations 2005*, Gallipoli, Lecce, organized by Lino Reggiani.
- August 13-18 2005, *NEXT-Sigmaphi*, Kolymbari, Crete, organized by G. Kaniadakis and A. Carbone.
- September 12-14 2005, *Coulomb05*, Senigaglia (Italy), organized by G. Turchetti.
- September 14-16 2005, *Fluctuations and Noise in Out of Equilibrium Systems*, Nice, organized by S. Residori.
- January 9-13 2006, *Relaxation dynamics of macroscopic systems*, Newton Institute, Cambridge UK, organized by S. Franz, J. Kurchan.
- July 3-13 2006, *Durham Symposium on Dynamical Systems and Statistical Mechanics*, Durham UK, organized by C. Beck, C. Dettmann and M. Pollicot.

- August 5-8 2006, *Conference on Complex Systems and Non-Extensive Statistical Mechanics*, ICTP Trieste, organized by M. Marsili.
- September 14-16 2006, *Heat transport simulation at the atomic scale: new challenges for the future*, CECAM Lyon, organized by J.L. Barrat.
- September 18-20 2006, *Vlasovia 2006*, Florence, Italy, organized by Francesco Califano and Giovanni Manfredi.
- September 21-23 2006, *Statistical mechanics and field theory*, Bari, organized by G. Gonnella.
- December 6-8 2006, *Nonlinear dynamics of acoustic modes in finite lattices*, Max Planck Institute for Complex Systems, Dresden, organized by S. Flach.
- January 8-26 2007, *Nonlinear lattice dynamics: from localization to statistical behavior*, CICC, Cuernavaca, Mexico, organized by T. Bountis, J. Fujioka, C. Jung, A. Minzoni and P. Panavotaros.
- April 18-20 2007, *Deterministic dynamics meets stochastic dynamics*, The Erwin Schrödinger Institute for Mathematical Physics, Vienna, organized by C. Dellago, P. Hänggi and H. Kauffmann.
- June 4-8 2007, *Chaos, Complexity and Transport: Theory and Applications*, Marseille, organized by Cristel Chandre and Xavier Leoncini.
- July 2-4 2007, *Complexity and non extensivity, CTNEXT07*, Catania, Statphys23 Satellite organized by A. Rapisarda.
- July 9-14 2007, *STATPHYS23*, Genova, organized by V. Loreto, L. Pietronero, and S. Zapperi.
- September 4-7 2007, *Fluctuations and noise in out of equilibrium systems*, Beaulieu sur Mer, Nice, organized by Stefania Residori.
- September 25-26 2007, *Long-range interactions and global coupling*, Glasgow, University of Strathclyde, Institute of Complex Systems, organized by Gianluca Oppo.
- September 27-28 2007, *Dynamique et Mécanique Statistique des Systèmes avec forces à longue portée*, GDR Phenix, Paris, Institute Henri Poincaré, organized by Thierry Dauxois.
- October 8-11 2007, *Self-assembly of particles into longitudinal and transverse structures*, Porquerolles, France, organized by R. Kaiser and Ph. Courteille.
- November 5-9 2007, *Entropy production, transport, turbulence*, Institut Henri Poincaré, Paris, organized by Henk van Beijeren.
- March 17-18 2008, *Complexity and Statistical Mechanics*, Academia Belgica, Roma.
- July 3-8 2008, *Mediterranean Conference in Astrophysics*, organised by R. Ruffini.
- August 3-29 2008 *Les Houches Summer School on Long-Range Interacting Systems*, organised by T. Dauxois and S. Ruffo.
- September 3-5 2008, *Statistical Mechanics and Field Theory*, Bari, organised by G. Gonnella.
- September 8-10 2008, *Wandering in Complexity (Parisi's 60th birthday)*, Roma, organised by E. Marinari.
- February 16-27 2009, *Many-body systems far from equilibrium*, Dresden, organized by Gunter Schutz.
- April 14 - May 8 2009, *Bloch oscillations and Landau-Zener tunneling: from hot electrons to ultracold atoms*, Dresden, organized by E. Arimondo and Y. Kosevich.

- April 16-18 2009, Interdisciplinary topics in statistical physics, Venezia, organized by F. Seno and E. Carlon.
- Jun 23 2009, Minisymposium on long-range interactions, The Weizmann Institute of Science, Rehovot, organized by D. Mukamel.
- Juillet 6-24 2009, Non equilibrium physics from classical to quantum low dimensional systems, ICTP Trieste, organized by L. Cugliandolo and G. Mussardo.
- August 31- September 11 2009, International Summer School Fundamental Problems in Statistical Physics XII, Leuven, organized by G. T. Barkema, Gunter Schutz and E. Carlon.
- September 15-19 2009, Bogolyubov Kyiv Conference Modern Problems of Theoretical and Mathematical Physics, Kyiv, Ukraine, organized by Anatoly Zagorodny.
- October 5-9 2009, XI Latin American Workshop on Nonlinear Phenomena LAWNP09, Buzios, Brasil, organized by C. Anteneodo et M. da Luz.
- November 16-27 2009, Long Range Interactions in Classical and Quantum Mechanics, Stellenbosch, South Africa, organized by Michael Kastner.
- July 12-14 2010, Dynamics Days Asia-Pacific organized by Bruce J. Henry, UNSW, Sydney Australia.
- July 19-23 2010, Statphys24, Cairns, Australia.
- July 11-15 2011 SIGMAPHI11, Larnaca, Cyprus.
- October 17-19 2011 "Systems with long-range interactions", PEEPS, ENS de Lyon.
- November 15-16 2011 "Meeting in memory of Jerome Leon", Montpellier, organized by Jerome Dorignac.

## Publications

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