
Thierry DAUXOIS

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Date of birth	September 15th, 1967 in Toulouse (France)
Nationality	French
Family status	Married to Florence Raynal 2 children (Chloé 1996, Timothée 1999)
Professional address	Laboratoire de Physique Ecole Normale Supérieure de Lyon 46 Allée d'Italie 69364 Lyon cédex 07, France
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Position	‘Directeur de Recherche’ CNRS at ENS Lyon
2005-2011	Head of the Graduate Program (Master 2) ENS Lyon/Université Lyon 1
2006-2009	Director of GDR CNRS Phénix
2008-2010	Member of CNRS Theoretical Physics Board (CN02)
2010-2012	President of CNRS Theoretical Physics Board (CN02)
2012-	Director of Laboratoire de pPhysique

EDUCATION and CAREER

[1985-1987]	Studies in Toulouse
[1987-1991]	Student at ENS Lyon
[1990]	Agrégation de Physique (rank: 2 nd). National Teaching Examination
[1990-1992]	PhD Thesis at the University of Dijon, supervisor M. Peyrard <i>Nonlinear dynamics and statistical mechanics of a nonlinear model for DNA</i>
[1993]	Scientific researcher for the national military service at ENS Lyon, supervisor S. Fauve
[1994]	Appointment as CNRS Research Associate at ENS Lyon
[1999]	‘Habilitation à Diriger des Recherches’ <i>Nonlinear localized waves: applications to condensed matter and hydrodynamics</i>
[2006]	Appointment as CNRS Research Director at ENS Lyon

MAIN RESEARCH INTERESTS

See Publications' list for references

- ◇ SOLITARY WAVES: CREATION, STABILITY AND PHYSICAL APPLICATIONS [B3,B4,B5,B6]
 - Energy Localisation in Nonlinear Lattices, Breather modes [A1,A2,A6,A9,A18,A20,A36]
 - Breathers, Equipartition of energy and chaos [A23,A25,A26,A44,A47,A48,A59,A60,A62]
 - Application to Biophysical Problems [A3,A4,A5,A6,A7,A8,A11]
 - Diffusion of Atoms on Surfaces, Modelization with kink's concept, Mobility of defects [A15,A16,A17,A19,A21,A22,A24,A28]
- ◇ CONNECTIONS BETWEEN NONLINEAR DYNAMICS AND STATISTICAL MECHANICS
 - Phase Transitions in simple one-dimensional systems [A12,A14,A29,A33]
 - Lyapunov Exponents and Phase Transitions [A32,E5].
 - Numerical Calculation of Lyapunov Exponents [E4,D7]
- ◇ DYNAMICS AND THERMODYNAMICS OF SYSTEMS WITH LONG-RANGE INTERACTIONS
 - Ensembles Inequivalence [A37,A43,A46,A51,A54,B2,C2,A61,A65,A69]. *Work in progress.*
 - Birth and stabilisation of out-of-equilibrium states [A30,A31,A34,A35,C3].
 - Relaxation toward equilibrium [A39,A42,A49,D8,A54,A56,A58,A65,A70,A72]. *Work in progress.*
 - Effect of noise [A76]. *Work in progress.*
 - Application to Free Electron Laser (FEL) [A41].
- ◇ PATH INTEGRALS AND STATISTICAL MECHANICS [A57].
- ◇ STABILITY OF PERIODIC ARRAY OF VORTICES [A10,A13]
- ◇ STOCHASTIC OSCILLATIONS in AUTOCATALYTIC REACTIONS [A64,A68]
- ◇ INTERNAL WAVES IN STRATIFIED FLUIDS
 - Reflection of internal waves (Theory and Experiments) [A27,E3,A38,A40,A50,A63]. *Work in progress.*
 - Internal tides and soliton generations [A55,A66,A71,A75]. *Work in progress.*
 - A novel internal waves generator [A53,A67]. *Work in progress.*
 - Parametric Subharmonic Instability [A73,A74]. *Work in progress.*

PHD STUDENTS

- **Julien Barré** (2000-2003), cosupervisor Stefano Ruffo, Professor in Firenze University. *Statistical mechanics and out-of-equilibrium dynamics of systems with long-range interactions.* After 2 years as a post-doc with A. R. Bishop (CNLS, Los Alamos), Julien is now Maître de Conférences in the Mathematical Department of the University of Nice. <http://math1.unice.fr/~jbarre/>
- **Louis Gostiaux** (2003-2006). *Experimental study of internal gravity waves in presence of topography: emission, propagation and reflection.* After 18 months as a post-doc with H. Van Haren (NIOZ, Netherlands), Louis is now CNRS researcher at the LEGI in Grenoble. <http://www.louis-gostiaux.fr/>
- **Sébastien Paulin** (2003-2007), cosupervisor Angel Alastuey, Director of research at ENS Lyon. *Numerical estimation of path integrals for statistical mechanics' calculation.* Sébastien is now Professeur Agrégé at ENS Lyon.
- **Matthieu Mercier** (2007-2010). *Solitons and solibores in stratified fluids.* Matthieu is now Post-Doc at MIT with Tom Peacock. <http://web.mit.edu/mmercier/www/>
- **Guilhem Bordes** (2009-2012), cosupervisor Jan-Bert Flor, Director of research at LEGI Grenoble. *Internal waves and vortices in stratified fluids.*
- **Cesare Nardini** (2010-2013), cosupervisor Lapo Casetti, Firenze University. *Energy Landscape, equilibrium and out of equilibrium physics of long and short range interacting systems.*
- **Baptiste Bourget** (2011-2014), cosupervisor Philippe Odier, Maître de Conférences at ENS Lyon. *Experimental study of the turbulent mixing due to internal waves overturning.*

MEMBER OF COMMITTEES

PHD THESIS: Martin Galmiche (referee), Jean-Christophe Comte (referee), Stéphanie Julien, Madhi Ben Jelloul (referee), Frédéric Moulin, Julien Barré, Mathias Perrin (referee), Pierre Guiraud, Nourdine Chikhi, Eric Sultan (referee), Rudy Maugé (referee), Louis Gostiaux, Kevin Tse Ve Koon (referee), Sébastien Paulin, Romain Bachelard (referee), Antonia Ciani (referee), Xavier Riedinger, Jeroen Hazewinkel (referee, Netherlands), Matthieu Mercier Razika Fernando, Gustavo During (referee), François Sicard, Basile Gallet, Xavier Durang, Pierre Augier.

HABILITATION THESIS: Cristel Chandre (referee), Bastien Fernandez, Michael Kastner (referee, Stellenbosch, South Africa), Antonio Picozzi, Panos Kevrekidis (tenure, Amsherst, USA) Francis Auclair, Thomas Peacock (tenure, MIT, USA), Estelle Pitard (referee), Tommaso Roscilde.

INVITED CONFERENCES

- “Nonlinear Dynamical Phenomena in Physical, Chemical and Biological systems”, Lucca (Italie), September 1994.
- “Physics of Complexity”, Dolomieu (France), March 1995. **Conference Organiser.**
- “Quantitative Biophysics at the Molecular and Macromolecular Scales”, ICTP Trieste (Italie), July 1995.

- “Nonlinear Coherent Structures in Physics and Biology”, Edinburgh (Écosse), July 1995.
- “Complexity and Chaos”, Turin (Italie), October 1999.
- “Discrete Breathers”, Les Houches (France), March 2000.
- “Statistical Mechanics of Space-time Chaos”, Dresden (Allemagne), July 2000.
- “SIAM Conference on Applications of Dynamical Systems”, Snowbird (USA), May 2001.
- “Dynamics and Thermodynamics of Systems with Long Range Interactions”, Les Houches (France), February 2002. **Conference Organiser.**
- “Energy Localisation and Transfer in Crystals, Biomolecules and Josephson Arrays”, Les Houches (France), January 2003. **Conference Organiser.**
- GDR “Physique Statistique Hors d’équilibre”, Lyon, June 2003.
- “Intrinsic Localized Modes and Discrete Breathers in Nonlinear lattices”, Erice (Italie), July 2003.
- “News and Expectations in Thermostatistics”, Sardaigne (Italie), September 2003.
- “50 years of the FPU problem: Legacy, Impact and Beyond”, Los Alamos (USA), May 2005.
- “Nonlinear Physics: Condensed matter, Dynamical Systems and Biophysics”, Paris (France) May 2005. **Conference Organiser.**
- “FPU+50 : Nonlinear Waves 50 years after Fermi-Pasta Ulam”, Rouen, June 2005.
- “News, Expectations and Trends in Statistical Physics”, Chania (Greece), August 2005.
- GDR “Équations Cinétiques et Hyperboliques : Aspects Numériques, Théoriques, et de Modélisation”, Roscoff (France), August 2006.
- École “Acoustique et ondes non linéaires”, Ile d’Oléron (France), June 2007.
- “Dynamics and thermodynamics of systems with long-range interactions: Theory and experiments”, Assise (Italie), July 2007.
- “Congrès de Français de Mécanique”, Grenoble (France), August 2007.
- “Entropy, Chaos, Transport and Turbulence”, IHP Paris (France), November 2007.
- “Unsolved Problems of Noise”, Lyon (France), June 2008. **Conference Organiser.**
- “Long-Range Interacting Systems”, Les Houches (France), August 2008. **Conference Organiser.**
- DFD-APS 2008, San Antonio (USA), November 2008.
- “Many-body systems far from equilibrium: Fluctuations, slow dynamics and long-range interactions”, Dresden (Allemagne), February 2009.
- “Waves and Instabilities in Geophysical and Astrophysical Flows”, Porquerolles, May 2009.
- “Chaos in gravitating systems” in the “12th Marcel Grossman Meeting”, UNESCO, Paris, July 2009.
- “École d’été du non-linéaire”, Peyresq, August 2009.
- “XI Latin American Workshop on Nonlinear Phenomena”, Buzios, Brésil, October 2009.
- “Hamiltonian Approaches of ITER Physics”, CIRM Marseille, November 2009.

- “Long-range Interacting Systems in Classical and Quantum Physics”, Stellenbosch (South-Africa), November 2009.
- “Coordinated Mathematical Modeling of Internal Waves”, Banff (Canada), April 2010.
- “Wave Turbulence”, Les Treilles (France), July 2010.
- “School on Topographic Internal Waves”, Cargèse (France), November 2010. **Conference Organiser.**
- “Colloque MathOcéan”, Le Bourget du Lac, January 2011.
- “Geophysical and Astrophysical Internal Waves”, Les Houches (France), February 2011. **Conference Organiser.**
- “Chaos, Complexity and Transport”, Marseille, May 2011
- “International School on Non-linear Dynamics in Complex Systems”, Yaoundé (Cameroun), November 2011.
- “Colloquium in honor of Jérôme Léon”, Montpellier November 2011
- “Dynamique, non linéarités et complexité dans les phénomènes naturels terrestres”, Peyresq, June 2012.
- “SIAM Conference on Nonlinear Waves and Coherent Structures”, Seattle (USA), June 2012
- “Symposium on Nonlinear Dynamics, from toy models to complex systems”, 4th IEEE International Conference on Nonlinear Science and Complexity, Budapest (Hungary), August 2012.
- “Equilibrium and out-of-equilibrium properties of systems with long-range interactions”, CECAM & Centre Blaise Pascal, ENS Lyon, Août 2012.
- “Statistical mechanics of self-gravitating particles”, Fondation les Treilles, October 2012.

ORGANIZATION OF WORKSHOPS AND SUMMER SCHOLS

- “Physics of Complexity”, Dolomieu, March 1995. Co-organizers: S. Ciliberto (Lyon) and M. Droz (Genève).
- “Dynamics and Thermodynamics of Systems with Long-Range Interactions”, Centre de Physique des Houches, February 2002. Co-organizers: E. Arimondo (Pise), S. Ruffo (Florence) and M. Wilkens (Postdam).
- “Energy Localisation and Transfer in Crystals, Biomolecules and Josephson Arrays”, Les Houches (France), January 2003. Co-organizers: R. S MacKay (Warwick) and M. Peyrard (Lyon).
- “Nonlinear Physics: Condensed Matter, Dynamical Systems and Biophysics”, Institut Henri Poincaré, Paris (France), May 2005. Co-organizers: R. S MacKay (Warwick) and G. Tsironis (Heraklion).
- “Unsolved Problems of Noise”, Lyon (France), June 2008. Co-organizers: S. Ciliberto, L. Bellon, E. Bertin, S. Roux, L. Vanel (Lyon).
- “Long-Range Interacting Systems”, Les Houches Summer School (France), August 2008. Co-organizer: S. Ruffo (Florence) and L. Cugliandolo (Paris).
- “Topographical Internal Waves”, Cargèse Summer School (France), November 2010. Co-organizers: C. Staquet (Grenoble) and O. Eiff (Toulouse).
- “Geophysical and Astrophysical Internal Waves”, Les Houches (France), February 2011. Co-organizer: T. Peacock (Boston).
- “Long-Range Interacting Systems”, Lyon, October 2011. Co-organizers: S. Ruffo (Lyon).
- “International School on Non-linear Dynamics in Complex Systems”, Yaoundé (Cameroun), November 2011. Co-organizers: T.C. Kofane (Yaoundé), M. Marsili (Trieste), M. Müller (Trieste), A.M. Dikande (Yaoundé), J.P. Nguenang (Yaoundé).
- “Equilibrium and out-of-equilibrium properties of systems with long-range interactions”, Centre Blaise Pascal, August 2012. Co-organizers: S. Ruffo (Firenze), Y. Levin (Porto Alegre), D. Mukamel (Weizmann Institute).
- “Statistical mechanics of self-gravitating particles”, Fondation les Treilles, October 2012. Co-organizers: R.S. MacKay (Warwick), Y. Pomeau (Tucson).

ADMINISTRATIVE TEACHING AND RESEARCH APPOINTMENTS

- Head of graduate studies in physics (M2) at ENS-Lyon: 2005 - 2011.
- Director of the French Research Society for Nonlinear and Statistical Physics (GDR Phenix): 2006-2009.
- Member of CNRS Theoretical Physics Board (CN02): 2008-2010.
- Président of CNRS Theoretical Physics Board (CN02): 2010-2012.
- Director the Laboratoire de Physique de l'ENS Lyon: 2012-2015. (Deputy director in 2011)

RESEARCH GRANTS

- ACI jeune chercheur (2001-2004): “Ondes non linéaires : rôle combiné des non linéarités, du désordre, de la dispersion et de la dissipation”. 600 kF. Principal Investigator (PI) with E. Falcon.
- ANR TOPOGI3D 2005-2007: “Topographie et ondes de gravité internes dans l’océan et l’atmosphère” with LEGI (Sommeria, Staquet, Voisin) and IMFT-Météo France (Eiff, Paci). 330 k€. PI of the Lyon’s node.
- PATOM-CNRS 2005: “Réflexion d’ondes internes sur un fond marin incliné : étude de la turbulence et du mélange induits”. 13 k€. PI.
- LEFE-CNRS 2007-2011: “Etude expérimentale de la génération de solibores et solitons en milieu stratifié”. 11 k€. PI.
- MIT-France 2008-2009 Seed Fund: “Internal Tide Scattering and Ocean Mixing”. 15 k€. PI with T. Peacock (MIT).
- ANR PIWO 2009-2011: “Physics of Internal Waves for Oceanography” with LEGI (Gostiaux, Sommeria, Staquet, Voisin) and POC (Auclair). 400 k€. Leader.
- MIT-France 2010-2011 Seed Fund: “Realistic laboratory modeling of nonlinear internal tide generation”. 12.5 k€. PI with T. Peacock (MIT).
- Rhône-Alpes Cible 2010 : “Interactions ondes-tourbillons en milieu stratifié et tournant”. 30 k€. PI with LEGI (JB Flor, L. Gostiaux).
- ANR LORIS 2010-2013: “Out of equilibrium properties of systems with long-range interactions” with Ruffo (PI), Bouchet, Bertin. 400 k€.
- PICS-CNRS 2011-2013: “Modélisation de la génération de marées internes non linéaires” with Peacock (MIT, USA).
- PEPS-CNRS 2011: Physique Théorique et ses Interfaces: “Interactions longue portée: systèmes isolés et perturbations externes” with Ruffo (Florence, Italy).
- ANR ONLITUR 2011-2014: “Ondes non-linéaires et turbulence en écoulements tournants et stratifiés” with FAST (Moisy, Cortet, Rabaud). 300 k€.

PUBLICATIONS

BOOKS and REVIEWS

[B9] T. Dauxois, S. Ruffo, *Journal of Statistical Mechanics: Theory and Experiment* (2010).
Topical issue: Long-Range Interacting Systems.

[B8] T. Dauxois, S. Ruffo, L. F. Cugliandolo, *Lecture Notes of the August 2008 Les Houches Summer School: Volume 90*, Oxford University Press (2009).
Long-Range Interacting Systems.

- [B7] A. Campa, T. Dauxois, S. Ruffo, Physics Reports 480, 57-159 (2009).
Statistical mechanics and dynamics of solvable models with long-range interactions.
- [B6] T. Dauxois, M. Peyrard, 420pp, Cambridge University Press (2006).
Physics of Solitons.
- [B5] T. Dauxois, R. S. MacKay (Eds), Physica D 126, 1-246 (2006). *Nonlinear Physics: Condensed Matter, Dynamical Systems and Biophysics - A Special Issue dedicated to Serge Aubry.*
- [B4] M. Peyrard, T. Dauxois, “Savoirs Actuels”, CNRS Éditions-EDP Science (2004).
Physique des Solitons.
- [B3] T. Dauxois, A. Litvak-Hinenzon, R. S. MacKay, A. Spanoudaki, Advanced Series in Nonlinear Dynamics, Volume 22, World Scientific (2003).
Energy Localization and Transfer.
- [B2] T. Dauxois, S. Ruffo, E. Arimondo, M. Wilkens, Lect. Notes in Phys. 602, Springer (2002)
Dynamics and Thermodynamics of Systems with Long-Range Interactions.
- [B1] S. Ciliberto, T. Dauxois, M. Droz, Éditions Frontières (1995).
Physics of Complexity.

CHAPTER OF BOOKS

- [C4] N. Theodorakopoulos, M. Peyrard, T. Dauxois, *Critical dynamics of DNA denaturation*, in “Localization and Energy Transfer in Nonlinear Systems”, World Scientific (2003).
- [C3] T. Dauxois, V. Latora, A. Rapisarda, S. Ruffo, A. Torcini, Lect. Notes in Phys. 602, Springer (2002),
The Hamiltonian mean field model: from dynamics to statistical mechanics.
- [C2] T. Dauxois, S. Ruffo, E. Arimondo, M. Wilkens, Lect. Notes in Phys. 602, Springer (2002)
Dynamics and thermodynamics of systems with long range interactions: an introduction.
- [C1] T. Dauxois, M. Peyrard, *A nonlinear model for DNA melting*, in “Nonlinear Excitations in Biomolecules”, p. 127, Ed. Peyrard, Springer (1995).

ARTICLES

The publications are available on the webpage <http://perso.ens-lyon.fr/thierry.dauxois/>.

- [A.76] C. Nardini, S. Gupta, S. Ruffo, T. Dauxois, F. Bouchet, submitted (2011) - Kinetic theory for non-equilibrium stationary states in long-range interacting systems.
- [A.75] M. J. Mercier, M. Mathur, L. Gostiaux, T. Gerkema, J. M. Magalhaess, Jose C. B. Da Silva, T. Dauxois, submitted (2011) - Soliton generation by internal tidal beams impinging on a pycnocline : laboratory experiments.
- [A.74] S. Joubaud, J. Munroe, P. Odier, T. Dauxois, submitted (2011) - Experimental parametric subharmonic instability in stratified fluids.
- [A.73] G. Bordes, F. Moisy, T. Dauxois, P-P. Cortet, Physics of Fluids, in press (2012) - Experimental evidence of a triadic resonance of plane inertial waves in a rotating fluid.
- [A.72] R. Bachelard, T. Dauxois, G. De Ninno, S. Ruffo, F. Staniscia, Physical Review E 83, 061132 (2011) - Vlasov equation for long-range interactions on a lattice.

- [A.71] M. Mercier, R. Vasseur, T. Dauxois, *Nonlinear Processes in Geophysics*, **18**, 193-208 (2011) - Resurrecting dead-water phenomenon.
- [A.70] R. Bachelard, F. Staniscia, T. Dauxois, G. De Ninno, S. Ruffo, *Journal of Statistical Mechanics* P03022 (2011) - Stability of inhomogeneous states in mean-field models with an external potential.
- [A69] T. Dauxois, P. De Buyl, L. Lori, S. Ruffo, *Journal of Statistical Mechanics* P06015 (2010) - Models with short and long-range interactions: phase diagram and reentrant phase.
- [A68] P. de Anna, F. Di Patti, D. Fanelli, A. J. McKane, T. Dauxois, *Physical Review E* **81**, 056110 (2010) - A spatial model of autocatalytic reactions.
- [A67] M. Mercier, D. Martinand, M. Mathur, L. Gostiaux, T. Peacock, T. Dauxois, *Journal of Fluid Mechanics* **657**, 308-334 (2010) - New wave generation.
- [A66] T. Peacock, M. Mercier, H. Didelle, S. Viboud, T. Dauxois, *Physics of Fluids* **21**, 121702 (2009) - A laboratory study of low-mode internal tide scattering by finite-amplitude topography
- [A65] A. Campa, T. Dauxois, S. Ruffo, *Physics Reports* **480**, 57-159 (2009).
Statistical mechanics and dynamics of solvable models with long-range interactions.
- [A64] T. Dauxois, F. Di Patti, D. Fanelli, A. McKane, *Physical Review E* **79**, 036112 (2009).
Enhanced stochastic oscillations in autocatalytic reactions.
- [A63] M. Mercier, N. Garnier, T. Dauxois, *Physics of Fluids* **20**, 0866015 (2008).
Reflection and diffraction of internal waves analyzed with the Hilbert transform.
- [A62] T. Dauxois, S. Ruffo, *Scholarpedia*, **3**(8):5538 (2008).
Fermi-Pasta-Ulam nonlinear lattice oscillations.
- [A61] F. Bouchet, T. Dauxois, D. Mukamel, S. Ruffo, *Physical Review E* **77**, 011125 (2008).
Phase space gaps and ergodicity breaking in systems with long range interactions.
- [A60] T. Dauxois, *Physics Today* **61**, 1, 55-57 (2008).
Fermi, Pasta, Ulam and a mysterious lady.
- [A59] T. Dauxois, R. Khomeriki, S. Ruffo, *European Physical Journal Special Topics* **147**, 3-23 (2007).
Modulational instability in isolated and driven Fermi-Pasta-Ulam lattices.
- [A58] T. Dauxois, *Journal of Statistical Mechanics* N08001 (2007).
Non Gaussian distributions under scrutiny.
- [A57] S. Paulin, A. Alastuey, T. Dauxois, *J. Stat. Phys* **128**, 1391-1414 (2007).
Analysis of path integrals at low temperature: box formula, occupation time and ergodic approximation.
- [A56] Y. Yamaguchi, F. Bouchet, T. Dauxois, *Journal of Statistical Mechanics* P01020 (2007)
Algebraic correlation function and anomalous diffusion in the HMF model.
- [A55] L. Gostiaux, T. Dauxois, *Physics of Fluids* **19**, 028102 (2007).
Laboratory experiments on the generation of internal tidal beams over steep slopes.
- [A54] A. Antoniazzi, D. Fanelli, J. Barré, PH. Chavanis, T. Dauxois, S. Ruffo, *Physical Review E* **75**, 011112 (2007). *A maximum entropy principle explains quasi-stationary states in systems with long-range interactions.*
- [A53] L. Gostiaux, H. Didelle, S. Mercier, T. Dauxois, *Experiments in Fluids* **42**, 123-130 (2007).
A novel internal wave generator.
- [A52] T. Dauxois, R. S. MacKay, G. Tsironis, *Physica D* **216**,vii-ix (2006).
Preface to Physica D, Volume 216, Issue 1 (2006).

- [A51] F. Bouchet, T. Dauxois, S. Ruffo, Europhysics News 37, 2, 9-10 (2006).
Controversy about the applicability of Tsallis statistics to the HMF model.
- [A50] L. Gostiaux, T. Dauxois, H. Didelle, J. Sommeria, S. Viboux, Physics of Fluids **18**, 056602 (2006).
Quantitative laboratory observations of internal wave reflection on ascending slopes.
- [A49] J. Barré, F. Bouchet, T. Dauxois, S. Ruffo, Y. Y. Yamaguchi, Physica A **365**, 177-183 (2006).
The Vlasov equation and the Hamiltonian Mean-Field model.
- [A48] T. Dauxois, M. Peyrard, S. Ruffo, European Journal of Physics **26**, S3-S11 (2005).
The FPU experiment: historical and pedagogical perspectives.
- [A47] T. Dauxois, M. Peyrard, La Recherche, Mai **386**, 51-53 (2005).
La dernière expérience d'Enrico Fermi.
- [A46] T. Tatekawa, F. Bouchet, T. Dauxois, S. Ruffo, Physical Review E **71**, 056111 (2005).
Thermodynamics of the self-gravitating ring model.
- [A45] T. Dauxois, F. Raynal, Bulletin de l'Union des Physiciens **871**, 205-208 (2005).
Archimède m'a tromper.
- [A44] T. Dauxois, R. Khomeriki, F. Piazza, S. Ruffo, Chaos **15**, 015110 (2005).
The Anti-FPU Problem.
- [A43] J. Barré, F. Bouchet, T. Dauxois, S. Ruffo, J. Stat. Phys. **119**, 677-713 (2005).
Large deviation techniques applied to long-range interacting systems.
- [A42] F. Bouchet, T. Dauxois, Physical Review E 72, 045103(R) (2005). *Prediction of anomalous diffusion and algebraic relaxations for long-range interacting systems, using classical statistical mechanics.*
- [A41] J. Barré, T. Dauxois, G. De Ninno, D. Fanelli, S. Ruffo, Phys. Rev. E **69**, 045501 (2004).
Statistical theory of high-gain free-electron laser saturation.
- [A40] T. Dauxois, A. Didier, É. Falcon, Physics of Fluids **16**, 1936-1941 (2004).
Observation of near-critical reflection of internal waves in a stably stratified fluid.
- [A39] Y. Yamaguchi, J. Barré, F. Bouchet, T. Dauxois, S. Ruffo, Physica A **337**, 36-66 (2004)
Nonlinear stability criteria of the Vlasov equation and quasi-stationary states of the HMF model.
- [A38] L. Gostiaux, T. Dauxois, Bulletin de l'Union des Physiciens **868**, 25-40 (2004).
Propagation et réflexion d'ondes internes dans l'océan: le mystère de l'angle critique.
- [A37] T. Dauxois, S. Lepri, S. Ruffo, Com. in NL Science and Num. Sim. **8**, 375-387 (2003).
Clustering and ensembles inequivalence in mean-field hamiltonian models.
- [A36] F. Gobet, S. Ciliberto, T. Dauxois, European Physical Journal B **34**, 193-199 (2003).
Aging phenomena in nonlinear dissipative chains.
- [A35] J. Barré, F. Bouchet, T. Dauxois, S. Ruffo, Physical Review Letters **89**, 110601 (2002).
Out-of-equilibrium states as statistical equilibria of an effective dynamics.
- [A34] J. Barré, F. Bouchet, T. Dauxois, S. Ruffo, European Physical Journal B **29**, 577 (2002).
Birth and long-time stabilization of out-of-equilibrium coherent structures.
- [A33] T. Dauxois, N. Theodorakopoulos, M. Peyrard, Jour. of Statistical Phys. **107**, 869 (2002).
Thermodynamic instabilities in one dimension: correlations, scaling and solitons.
- [A32] J. Barré, T. Dauxois, Europhysics Letters **55**, 154 (2001).
Lyapunov exponents as a dynamical indicator of a phase transition.

- [A31] J. Barré, T. Dauxois, S Ruffo, Physica A **295**, 254 (2001).
Clustering in a model with repulsive long-range interactions.
- [A30] T. Dauxois, P. C. W. Holdsworth, S. Ruffo, European Physical Journal B **16**, 659 (2000).
Violation of ensemble equivalence in the antiferromagnetic mean-field XY model.
- [A29] N. Theodorakopoulos, T. Dauxois, M. Peyrard, Physical Review Letters **85**, 6 (2000).
Order of the phase transition in models of DNA thermal denaturation.
- [A28] C. Laroche, T. Dauxois, M. Peyrard, American Journal of Physics **68**, 552 (2000).
Discreteness effects on soliton dynamics: a simple experiment.
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