

Memoria 2001



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1. Líneas de investigación

Las principales líneas de investigación durante el año 2001 han sido:

- Sistemas complejos: Fenómenos genéricos en física estadística y no lineal. Sistemas dinámicos.
- Óptica no lineal. Información y óptica cuántica.
- Láseres de semiconductor.
- Dinámica de fluidos y fluidos geofísicos.
- Biofísica y fenómenos no lineales en fisiología.
- Modelos de cooperación basados en agentes. Dinámica de sistemas sociales.

2. Personal

a) Personal de plantilla

- Dr. Salvador Balle, TU UIB
- Dr. Pere Colet, Titular Científico CSIC
- Dr. Emilio Hernández-García, TU UIB – Prof. Investigación CSIC
- Dr. Manuel Matías, Titular Científico CSIC
- Dr. Claudio Mirasso, TU UIB
- Dr. Oreste Piro, TU UIB
- Dr. Maxi San Miguel, CU UIB
- Dr. Raúl Toral, CU UIB

b) Contratados y becarios postdoctorales

- Dr. Jan Danckaert, Contrato postdoctoral Vrije Universiteit Brussel
- Dr. Victor M. Eguíluz, Ay. Univ. UIB
- Dr. Gonzalo Izús, Beca postdoctoral CONICET-Univ. Mar del Plata
- Dr. Alessandro Scire, Contrato postdoctoral Marie Curie de la Comisión Europea
- Dr. Pierre Scotto, Becario postdoctoral proyectos QSTRUCT y QUANTIM
- Dr. Tomás Sintés, Ay. Univ. UIB

c) Becarios predoctorales

- Sr. Morten Bache, Becario del Riso National Lab. (Dinamarca)
- Sra. Marzena Ciszak, Becaria European Physical Society
- Sr. Damia Gomila, Becario asociado al proyecto PB97-0141-C02-02 de la DGES
- Sr. Josep Mulet, Becario FPU
- Sra. Roberta Zambrini, Becario FPU
- Sr. Juan José Cerdá, Becario FSE
- Sr. José Luis Daudén, Becario proyecto OCCULT
- Sr. Iacyel Gomez, Becario ICI

- Sr. Francesco Marino, Becario proyecto VISTA
- Sra. Cati Mayol, Estudiante tercer ciclo
- Sr. Konstantin Klemm, Becario proyecto HPMF-CT-2000-00610 de la CE
- Sr. Raúl Vicente, Becario proyecto OCCULT
- Sr. Idan Tuval, Becario asociado al proyecto CONOCE (BFM2000-1108)

d) Personal técnico y de apoyo

- Sra. Ainhoa Huici, contrato gestión de proyectos
- Sr. Jose Luis Puerto, colaboración en gestión proyectos
- Sr. Miguel Angel Urbina, técnico informático

e) Contratos INEM de técnicos en formación (5 meses)

- Sra. M. Pilar Heredero, Técnico informático
- Sr. José Marco, Técnico informático
- Sr. Antonio Pujol, Técnico informático
- Sr. Sergio Sarrión, Técnico electrónico
- Sr. José Javier Valdivieso, Técnico electrónico

3. Proyectos de investigación y financiación externa

-"OCCULT: Optical Chaos communications using laser diode transmitters" IST-2000-29683. Programa "Information Society Technologies: Future and Emerging Technologies".

Coordinador del proyecto europeo y responsable UIB: C. Mirasso.

Investigador responsable CSIC: P. Colet.

Presupuesto del grupo español: 298.191 Euro (2001-2004)

-"QUANTIM: Quantum Imaging". IST-2000-26019. Programa "Information Society Technologies: Future and Emerging Technologies".

Investigador responsable del grupo español: M. San Miguel.

Presupuesto: 180.000 Euro. (2000-2003)

-"VISTA: VCSELS for Information Society Technology Applications".

RTN1-1999-00279. Programa "Human Potential-Research Training Networks".

Investigador responsable del grupo español: M. San Miguel.

Presupuesto: 182.000 Euro. (2000-2003)

-"QSTRUCT: Quantum Structures". FMRX-CT96-0077. Network del programa "Training and Mobility of Researchers "

Investigador responsable del grupo español: M. San Miguel.

Presupuesto: 240.000 ECU. (1996-2001)

-"PIANOS: Processing Information by Arrays of Nonlinear Optical Solitons". ESPRIT 28235. Subcontrato del Institut Nonlineaire de Nice (Prof. J. R. Tredicce).

Investigador responsable: S. Bal · le.

Presupuesto: 20.000 Euro (2000-2001)

-"Modeling and testing of VCSEL arrays" HPMF-CT-2000-00610. Contrato del Programa "Improving the Human Research Potential and the Socioeconomic knowledge".

Investigador responsable: M. San Miguel.

Presupuesto: 90.808 Euro (2000-2002)

-"Wavelength scale photonic components for telecommunications".

Acción COST 268. Corepresentante español: M. San Miguel. (1998-2002)

-"Semiconductor Devices for Optical Signal Processing". Acción COST 267.

Corepresentante español: S. Bal · le. (1998-2002)

-"QUIPCRONE" IST-RTN-992-0698. Red de excelencia dentro del Programa Information Society Technologies en el campo de la información cuántica. Responsable del grupo: M. San Miguel.

-"SOFT: Satellite-based Ocean Forecasting " EVK3-2000-00561. Programa Energía, Medio Ambiente y Desarrollo Sostenible. CE. (2001-2003).

Participa: E. Hernández-García

-"CONOCE: Cooperación y fenómenos no lineales en sistemas complejos extendidos" BFM2000-1108. Proyecto de Investigación Científica y Desarrollo Tecnológico del Ministerio de Ciencia y Tecnología.

Investigador Principal: M. San Miguel.

Presupuesto: 20.350.400 ptas (2000-2003)

-"Diodos láser con selección modal" TIC99-0645-C05-02 (CICYT).

Programa Nacional de Tecnologías de la Información y las Telecomunicaciones.

Investigador Principal: S. Bal · le.

Presupuesto: 10.150.000 ptas. (1999-2002)

-"Variabilidad oceánica de alta frecuencia y sus implicaciones en el transporte de propiedades físicas y biológicas". MAR98-0840. (CICYT). Programa Nacional de Ciencia y Tecnología Marinas.

Investigador principal: E. Hernández-García.

Presupuesto: 6.970.000 ptas. (1998-2001)

-"Dinámica no lineal y estocástica en sistemas extendidos". PB97-0141-C02-02 de la DGES.

Investigador principal: P. Colet.

Presupuesto: 2.665.000 ptas. (1998-2001)

-"Dinámica no lineal y estocástica en sistemas extendidos": PB97-0141-C02-01 de la DGES.

Investigador principal: R. Toral.

Presupuesto: 3.500.000 ptas. (1998-2001)

-"IMAGEN": Procesos de transporte, campos de velocidades y análisis de estructuras oceánicas mediante imágenes de satélite". REN2001-0802-C02-01 (MCyT). Programa de Recursos Naturales.

Investigador Principal: E. Hernández-García
Presupuesto: 8.855.000 ptas (2001-2004)

- "Inestabilidades en la emisión de un láser de semiconductor sujeto a realimentación óptica, y sus aplicaciones". Acción Integrada Hispano-Alemana HA98-29.

Investigador responsable alemán: W. Elsässer (Universidad de Darmstadt)
Investigador responsable español: C. Mirasso.
Presupuesto: 1.020.000 ptas. (1999-2001)

- "Estructuras localizadas en cavidades ópticas no lineales". Acción Integrada Hispano-Italiana del MCyT, AINT HI2000-0027.

Investigador responsable italiano: G. Nalesso (Univ. Padova).
Investigador responsable del grupo español: M. San Miguel.
Presupuesto español: 4.657,84 Euro (2001-2003)

- "Polarization patterns and fluctuations in nonlinear optical systems".

Acción Integrada Hispano-Alemana del MCyT, AINT HA2000-0012.
Investigador responsable alemán: W. Lange (Universidad de Munster).
Investigador responsable del grupo español: M. San Miguel.
Presupuesto español: 7.542,70 Euro (2001-2003)

- "Dinàmiques no lineals d'autoorganització espaciotemporal" 2000XT 0005. Xarxa temàtica de la Generalitat de Catalunya.

Investigador responsable por el IMEDEA: M. San Miguel (2001-2002)

- "Dinàmica de sistemes òptics actius i passius modulats o forçats".

Acción especial del Govern de les Illes Balears.
Responsable: M. San Miguel.
Presupuesto: 800.000 ptas (2001)

- Programa IBERDROLA de Profesores Visitantes.

Responsable: M. San Miguel.
Presupuesto: 12.250.000 Ptas. (1999-2002)

- "Dynamique des systemes optiques actifs et passifs modulés ou forcés" (PICS 851). Proyecto de cooperación CNRS francés-Generalitat de Cataluña.

Investigadores principales: P. Glorieux (Lille) y R. Corbalán (Barcelona).
Investigador responsable IMEDEA: M. San Miguel (2000-2002)

- "PHASE: Phase Domains and Spatial Solitons in Nonlinear Optics".

Red 84 de la European Science Foundation.
Miembro del comité de coordinación: M. San Miguel. (2000-2003)

- "Model and data analysis connected to experimental examinations of turbulence with free and fixed boundaries". Niels Bohr Institute. Proyecto del Danish Natural Science Research Council (Dinamarca).

Participante: Víctor M. Eguiluz.
Investigador responsable: M.T. Levinson. (2000-2001)

4. Actividades internas: Seminarios del DFI/IMEDEA

- "Asymptotic Theory of Instabilities in Directly Modulated Semiconductor Lasers"
Cati Mayol. 17 Enero 2001.
- "Efficiency optimization in forced ratchets"
Tomas Sintés. 25 Enero 2001
- "Space occupation by seagrass clones: Emergence of non-linearity from simple, linear growth programmes"
Carlos M. Duarte, Nuria Marbá y Gary Kendrick, Departamento de Recursos Naturales, IMEDEA. 31 Enero 2001.
- "New developments in Semiconductor Laser Physics"
Salvador Balle, IMEDEA. 15 Enero 2001
- "Interaction of travelling waves and counter-propagating bright droplets in a nonlinear optical device: experiment and model."
Francesco Papoff, Department of Physics, University of Manchester. 20 Enero 2001
- "How to treat negative diffusion problems: the anharmonic oscillator in Q-representation."
Roberta Zambrini, ImedeA. 26 Febrero 2001
- "Procesos Lingüísticos Combinatorios y su Base Neurológica"
María Mercedes Piñango, Departamento de Lingüística y Programa Interdisciplinario de Neurociencia, Yale University, USA. 6 Marzo 2001
- "Superlattices and spirals in sodium vapor with optical feedback"
Thorsten Ackemann, Department of Physics, University of Munster. 12 Marzo 2001
- "Modeling surface instabilities"
Daniel Walgraef, Universidad Libre de Bruselas. 16 Marzo 2001
- "Dinámica espacio-temporal de ecosistemas: una aproximación teórica"
Jordi Bascompte, Estación Biológica de Doñana (CSIC). 19 Marzo 2001
- "On networks growth, ageing and citations -- How long does your paper survive?"
Konstantin Klemm, The Niels Bohr Institute, Copenhagen. 26 Marzo 2001
- "Dynamics of Mutually Coupled Semiconductor Lasers"
Claudio Mirasso, Departament de Física, UIB. 9 Abril 2001
- "A new framework for the study of the evolution of coloniality in birds"
Etienne Danchin, Universite Pierre et Marie Curie. 10 Abril 2001
- "Controlling the drag due to wakes in the flow past an obstacle."
Prof. José Eduardo Wesfreid, Laboratoire de Physique des Milieux Inhomogenes, Ecole Superieure de Physique et Chemie Industrielles et CNRS. 11 Abril 2001

- "Making a splash; Breaking a neck: The development of Complexity in Physical Systems"
Leo Kadanoff, University of Chicago. 24 Abril 2001
- "Turbulent Heat Flow: Complexity and Knowledge."
Prof. Leo P. Kadanoff, The James Franck Institute, The University of Chicago.
26 Abril 2001
- "Stochastic resonance in excitable optical systems"
Sr. Francesco Marino. 2 Mayo 2001
- "Polarization Coupling and Transverse Effects in Type-II Optical Parametric Oscillators"
Gonzal Izus.10 Mayo 2001
- "CDF(*) en la Industria Aeroespacial: Simulaciones de modelos RANS por Elementos Finitos"
Dr. Mariano Vazquez, Dassault Aviation, Paris. 18 Mayo 2001
- "Analysis of large scale gene expression patterns using DNA chips: Statistical and dynamical problems"
Marcelo Mangasco, Rockefeller University, New York. 4 Junio 2001
- "Symmetry breaking, double Hopf bifurcations and mixed modes in flows with SO(2) symmetry"
Juan Lopez, Arizona State University. 14 Junio 2001
- "Caos y excitabilidad en el laboratorio y en mar abierto"
Emilio Hernández García. 4 Julio 2001
- "Transverse instabilities in OPO"
Majid Taki, University of Lille and CNRS. 6 Julio 2001
- "Técnicas y aplicaciones de telemedicina"
Dr. Teresa Arredondo, Universidad Politécnica de Madrid. 16 Julio 2001
- "Quantum Aspects of Imaging"
Alessandra Gatti, INFN and University of Insubria (Como). 17 Julio 2001
- "Parrondo's Games: Role of cooperation"
Raúl Toral, IMEDEA. 23 Julio 2001
- "Dynamics of coupled excitable systems: an optical example"
Alejandro Yacomotti, Depto. de Física, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires. 27 Julio 2001
- "On the use of effective diffusivity to quantify barriers to transport"
Emily Shuckburgh, Laboratoire de Meteorologie Dynamique, Paris. 3 Agosto 2001
- "Noise induced synchronization of chaotic oscillators"
Prof. Juergen Kurths, Universitaet Potsdam. 3 Septiembre 2001

- "Programación en paralelo (MPI)"
M.A. Urbina, UIB. 14 Septiembre 2001
- "Anticipating the future of chaotic systems"
Cristina Masoller, Instituto de Fisica, Universidad de la Republica, Montevideo, Uruguay. 17 Septiembre 2001
- "Polarization self-modulation in a VCSEL subjected to a 90 degree polarization-rotating external optical feedback"
Marc Sciamanna, Faculte Polytechnique de Mons, Belgica. 4 Septiembre 2001
- "1/f noises and anticorrelations in financial systems."
Kestutis Staliunas, Physikalisches Technische Bundesanstalt, Braunschweig, Alemania.
5 Octubre 2001
- "Small world behavior in complex networks"
Victor M. Eguiluz. 11 Octubre 2001
- "Small world behavior in complex networks (II)"
Victor M. Eguiluz. 16 Octubre 2001
- "Polarization mode dispersion in optical fibers: theory, measurement and compensation"
Marco Santagiustina, Dipartimento di Elettronica e Informatica, Universita di Padova, Italia. 18 Octubre 2001
- "Experiments on polarization effects in VCSELs: Threshold behaviour, switching and transverse effects"
Markus Sondermann, Institute of Applied Physics, Universitaet Muenster, Germany. 23 Octubre 2001
- "Hay transiciones de fase en una dimensión?"
Angel Sanchez, Dept. de Matematicas, Univ. Carlos III de Madrid. 30 Octubre 2001
- "Sistemas complejos en la vida cotidiana: Fisica del trafico"
Angel Sanchez, Dept. de Matematicas, Univ. Carlos III de Madrid. 31 Octubre 2001
- "Noise and the dissemination of culture"
Konstantin Klemm, Niels Bohr Institute (Copenhague) and IMEDEA. 8 Noviembre 2001
- "A new approach to Multicanonical Monte Carlo Methods"
Joao V. Lopes, Centro de Fisica do Porto (CFP). 15 Noviembre 2001
- "Quantum limits to resolution in optics"
Prof. Claude Fabre, Universite Pierre et Marie Curie, Paris. 22 Noviembre 2001
- "Gain Anisotropy due to strain in Vertical-Cavity Surface-Emitting Lasers"
Dr. Krassimir Panajotov, Department of Applied Physics & Photonics, Vrije

Universiteit Brussels, Belgium and Institute of Solid State Physics, Sofia, Bulgaria.
23 Noviembre 2001

- "What can we learn from optical structures in sodium vapor? "
Prof. Wulfhard Lange, Westfaelische Wilhelms-Universitaet Muenster. 29
Noviembre 2001

- "Synchronization of Chaotic Semiconductor Laser Systems: A Vectorial
Coupling-Dependent Scenario"
Michael Peil, Institute of Applied Physics, Darmstadt University of Technology.
4 Diciembre 2001

- "Aplicación de modelos de crecimiento de estructuras a la propagación de
plantas clonales"
Dr. Tomàs Sintes, Dept. de Fisica, UIB. 19 Diciembre 2001

5. Publicaciones

5.1. Artículos en revistas internacionales

- "Pitch perception: A dynamical perspective"
Julyan H. E. Cartwright, Diego L. González, Oreste Piro
Proceedings National Academy of Science, **98**, 4855-4859 (2001)
- "Chaos Synchronization and Spontaneous Symmetry Breaking in Symmetrically
Delay Coupled Semiconductor Lasers".
T. Heil, I. Fischer, W. Elsasser, J. Mulet, C. Mirasso
Physical Review Letters, **86**, 795-798 (2001)
- "Noise-induced scenario for inverted phase diagrams".
M. Ibañes, J. García-Ojalvo, R. Toral and J.M. Sancho
Physical Review Letters, **87**, 20601 (2001)
- "Self-addressing two-photon cavity solitons".
R. Vilaseca, M.C. Torrent, J. García-Ojalvo, M. Brambilla, M. San Miguel
Physical Review Letters, **87**, 083902 (1-4) (2001)
- "Stable droplets and growth laws close to the modulational instability of a
domain wall".
Damià Gomila, Pere Colet, Gian-Luca Oppo, Maxi San Miguel
Physical Review Letters, **87**, 19410 (1-4) (2001)
- "Transition from oscillatory to excitable regime in a system forced at three
times its natural frequency".
R. Gallego, D. Walgraef, M. San Miguel, R. Toral
Physical Review E, **64**, 056218 (2001)
- "Efficiency optimization in forced ratchets due to thermal fluctuations".
K. Sumithra, T. Sintes
Physica A, **297**, 1-12 (2001)

- "Adsorption of semiflexible polymers on flat homogeneous surfaces".
T. Sintes, K. Sumithra, E. Straube
Macromolecules, **34**, 1352-1357 (2001)
- "Coherence Resonance in Chaotic Systems".
Carlos Palenzuela, Raúl Toral, Claudio Mirasso, Oscar Calvo, James Gunton
Europhysics Letters, **56**, 347 (2001)
- "Thermostatistics of extensive and non-extensive systems using generalized entropies".
Rafael Salazar, Raúl Toral
Physica A, **290**, 159-191 (2001)
- "Stochastic effects in intercellular calcium spiking in hepatocytes".
M.E. Gracheva, R. Toral, J.D. Gunton
Journal of Theoretical Biology, **212**, 111 (2001)
- "Cooperative Parrondo's Games".
Raúl Toral
Fluctuations and Noise Letters, **1**, L7-L12 (2001)
- "Main Resonances in Directly Modulated Semiconductor Lasers: Effect of Spontaneous Emission and Gain Saturation".
Catalina Mayol, Sergei I. Turovets, Raúl Toral, Claudio R. Mirasso, Luis Pesquera
IEEE Proceedings Optoelectronics, **148**, 41 (2001)
- "Chaotic advection of reacting substances: Plankton dynamics on a meandering jet".
Cristóbal López, Zoltan Neufeld, Emilio Hernández-García, Peter Haynes
Physics and Chemistry of the Earth B, **26**, 313-317 (2001)
- "Population dynamics advected by chaotic flows: a discrete-time map approach".
Cristóbal López, Emilio Hernández-García, Oreste Piro, Angelo Vulpiani, Enrico Zambianchi
CHAOS, **11**, 397-403 (2001)
- "Enhancement of Stochastic Resonance: The role of Non Gaussian Noises".
M.A. Fuentes, R. Toral, H.S. Wio
Physica A, **295**, 114 (2001)
- "Coherence Resonance in Chaotic Electronic Circuits".
O. Calvo, C. R. Mirasso, R. Toral
Electronics Letters, **37**, 1062 (2001)
- "Polarization Resolved Intensity Noise in Vertical-Cavity Surface-Emitting Lasers".
J. Mulet, C.R. Mirasso, M. San Miguel
Physical Review A, **64**, 023817 (2001)
- "Complex Ginzburg-Landau Equation in the Presence of Walls and Corners".
Víctor M. Eguiluz, Emilio Hernández-García, Oreste Piro

- Physical Review E, **64**, 036205 (1-10) (2001)
- "Analytical and Numerical Studies of Noise-induced Synchronization of Chaotic Systems".
Raúl Toral, Claudio Mirasso, Emilio Hernández-García, Oreste Piro
CHAOS, **11**, 665-673 (2001)
 - "Stochastic resonance in the thermohaline circulation".
P. Vélez Belchi, A. Alvarez, P. Colet, J. Tintoré, R. Haney
Geophysical Research Letters, **28**, 2053-2056 (2001)
 - "Quasiperiodic Patterns in Boundary-Modulated Excitable Waves".
Irene Sendiña-Nadal, Vicente Pérez-Muñuzuri, Víctor M. Eguíluz, Emilio Hernández-García, Oreste Piro
Physical Review E, **64**, 046208 (1-5) (2001)
 - "Transition to High-Dimensional Chaos through Quasiperiodic Motion".
Diego Pazo, Esteban Sánchez, Manuel A. Matías
International Journal of Bifurcation and Chaos, **11**, 2683-2688 (2001)
 - "Resonance structure in a weakly detuned laser with injected signal".
Catalina Mayol, Mario A. Natiello, Martin G. Zimmermann
International Journal of Bifurcation and Chaos, **11**, 2587-2605 (2001)
 - "Phase-Locked Spatial Domains and Bloch Domain Walls in Type-II Optical Parametric Oscillators".
G. Izus, M. San Miguel, M. Santagiustina
Physical Review E, **64**, 056231 (1-15) (2001)
 - "Effect of a Variable Delay in Delayed Dynamical Systems".
S. Madruga, S. Boccaletti, M.A. Matías
International Journal of Bifurcation and Chaos, **11**, 2875-2880 (2001)
 - "Interdisciplinary Challenges and Bottlenecks in the Aquatic Sciences".
Carlos Duarte, Oreste Piro
Limnology and Oceanography Bull., **10**, 57-61 (2001)
 - "Transverse and Polarization Mode Selection in VCSELs".
J. Mulet, C.R. Mirasso, S. Balle, M. San Miguel
Proceedings of SPIE, **4283**, 139-149 (2001)
 - "Dynamical Behavior of Two Distant Mutually-Coupled Semiconductor Lasers".
J. Mulet, C.R. Mirasso, T. Heil, I. Fischer
Proceedings of SPIE, **4283**, 293-302 (2001)

5.2. Capítulos de libros

- "Cooperation, adaptation and the emergence of leadership".
M. Zimmerman, V.M. Eguíluz, M. San Miguel
Proceeding of Workshop on Economics with Heterogeneous Interacting Agents.
73.86 Eds. J.B. Zimmerman and A. Kirman, Springer Verlag (2001)

- "Pattern Formation in a Type-II Optical Parametric Oscillator".
G. Izus, M. Santagiustina, M. San Miguel, P. Colet
Instabilities and Nonequilibrium Structures VIII. Ed. E. Tirapegui (2001)
- "Transverse Patterns in Type-II Optical Parametric Oscillators".
Gonzalo Izus, Marco Santagiustina, Maxi San Miguel, Pere Colet
NATO ARW Series: Nonlinearity and Disorder: Theory and Applications. F. Abdullaev et al, eds. (Kluwers Academic Publishers), 315-322 (2001)

5.3. Publicaciones enviadas en 2001

- "Polarisation Patterns and Vectorial Defects in Type II Optical Parametric Oscillators".
M. Santagiustina, E. Hernández-García, M. San Miguel, A.J. Scroggie, G.-L. Oppo
Physical Review E, **65**, 036610 (1-14) (2002)
- "Highly clustered scale-free networks".
K. Klemm, V.M. Eguíluz
Physical Review E, **65**, 036123 (2002)
- "Criteria for Synchronization of Coupled Chaotic External-Cavity Semiconductor Lasers".
J. Revuelta, C. Mirasso, P. Colet, L. Pesquera
IEEE: Photonics Technology Letters, **14**, 140-142 (2002)
- "Numerical Determination of the Distribution of Energies for the XY-model".
Rafael Salazar, Raúl Toral, A.R. Plastino
Physica A, **305**, 144 (2002)
- "Effetive Markovian aproximation for nonGaussian noises: a path integral approach".
M.A. Fuentes, C. Tessone, H.S. Wio, R. Toral
Physica A, **303**, 91 (2002)
- "Ensemble equivalence for non extensive thermodynamics".
R. Toral, R. Salazar
Physica A, **305**, 52 (2002)
- "Experimental Evidence of Stochastic Resonance in an Excitable Optical System".
F. Marino, M. Giudici, S. Barland, S. Balle
Physical Review Letters, **88**, 040601 (1-4) (2002)
- "Spatio-Temporal Modeling of the Optical Properties of VCSELs in Presence of Polarization Effects".
Josep Mulet, Salvador Balle
IEEE Journal of Quantum Electronics, **38**, 291-305 (2002)
- "Macroscopic quantum fluctuations in noise-sustained optical patterns".
Roberta Zambrini, Stephen M. Barnett, Pere Colet, Maxi San Miguel

- Physical Review A, **65**, 023813 (1-12) (2002)
- "Diffusive turn-off transients in current modulated multitransverse mode VC-SELs".
Angel Valle, Josep Mulet, Luis Pesquera, Salvador Balle
SPIE Proceedings, Paper OE4649-10 (2002)
 - "On the definition of physical temperature and pressure for nonextensive thermostatics".
Raúl Toral
Preprint, cond/mat-0106060 (2002)
 - "Space and Scale Localization in a Model of a Direct Transition to Spatiotemporal Chaos".
Guoming Xiong, J.D. Gunton, Haowen Xi, Raúl Toral
Preprint, nlin. CD/0105036 (2002)
 - "Sub-diffraction-limited resolution with squeezed light".
M.I. Kolobov, C. Fabre, P. Scotto, P. Colet, M. San Miguel
Coherence and Quantum Optics VIII, Rochester (2002)
 - "Characterization of a chaotic telecommunication laser for different fiber cavity lengths".
V. Annovazzi-Lodi, S. Merlo, M. Norgia A. Scirè
IEEE Journal of Quantum Electronics (2002)
 - "Synchronization regimes of optical-feedback-induced chaos in unidirectionally coupled semiconductor lasers".
A. Locquet, C. Masoller, C. Mirasso
Physical Review E (2002)
 - "Patterns arising from the interaction between scalar and vectorial instabilities in two-photon resonant Kerr cavities".
Miguel Hoyuelos, Daniel Walgraef, Pere Colet, Maxi San Miguel
Physical Review E (2002)
 - "Class A lasers with injected signal: bifurcation set and Lyapunov-potential function". Catalina Mayol, Raúl Toral, Claudio R. Mirasso, Mario A. Natiello
Physical Review A (2002)
 - "Experimental Observation of Coherence and Stochastic Resonances in an Electronic Chua Circuit".
O. Calvo, I. Gomes, C. Mirasso, R. Toral
AIP Proceedings (2002)
 - "Analytic stochastic treatment of a nonlinear quantum model with negative diffusion". Roberta Zambrini, Stephen M. Barnett
Physical Review A (2002)
 - "Isothermal ratchets: Numerical study of the efficiency of the energy transduction".

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- "Fuzzy stochastic resonance: robustness against noise tuning due to non Gaussian noises".
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 - "ON/OFF Phase Shift Keying for Chaos-Encrypted Communication using External-Cavity Semiconductor Lasers".
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 - "Theory of Main Resonances in Directly Modulated Diode Lasers".
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 - "Aesthetics, dynamics, and musical scales: A golden connection".
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Journal of New Musical Research (2002)
 - "Dynamical Properties of 2D Kerr Cavity Solitons".
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Journal Optical Society of America B (2002)
 - "Spatial Behavior of Light in Second Harmonic Generation".
Pierre Scotto, Maxi San Miguel
Physical Review A (2002)
 - "Anticipating the dynamics of chaotic maps".
Emilio Hernández-García, Cristina Masoller, Claudio R. Mirasso
Physics Letters A (2002)
 - "Intensity and Polarization Self-Pulsation in VCSELs".
Alessandro Scire, Josep Mulet, Claudio R. Mirasso, Maxi San Miguel
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 - "Dynamics of Modal Power Distribution in a Multimode Semiconductor Laser with Optical Feedback".
J. M. Buldú, J. Trull, M. C. Torrent, J. García-Ojalvo, C. R. Mirasso
Journal of Optics B (2002)
 - "Chaos Shift Keying Encryption in Chaotic External-Cavity Semiconductor Lasers Using a Single-Receiver Scheme".
C.R. Mirasso, J. Mulet, C. Masoller
IEEE Photonic Technological Letters (2002)
 - "Dynamical Entrainment of Unidirectionally Coupled Single Mode Diode Lasers".

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 SPIE Proceedings, Physics and Simulations of Optoelectronic Devices X (2002)
- "Intensity and Polarization Self-Pulsations in VCSELs".
 Alessandro Scirè, Josep Mulet, Claudio Mirasso, Maxi San Miguel
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 - "Vectorial Chaos Synchronization and Polarization Encoding in Self-Pulsating VCSELs".
 Alessandro Scirè, Josep Mulet, Claudio R. Mirasso, Jan Danckaert, Maxi San Miguel
 SPIE Proceedings, Physics and Simulations of Optoelectronic Devices X (2002)
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 - "On some localized solutions of coupled Ginzburg-Landau equations".
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 - "Boundary-forced spatial chaos".
 Víctor M. Eguiluz, Emilio Hernández-García, Oreste Piro
 Proceedings of 'Instabilities and Nonequilibrium Structures VII' (2002)
 - "On the topographic rectification of ocean fluctuations".
 Alberto Alvarez, Emilio Hernández-García, Joaquín Tintoré
 Proceedings of 'Instabilities and Nonequilibrium Structures VII' (2002)
 - "Dynamics of Defects in the Vector Complex Ginzburg-Landau Equation".
 Miguel Hoyuelos, Emilio Hernández-García, Pere Colet, Maxi San Miguel
 Physica D (2002)
 - "Small-scale structure of nonlinearly interacting species advected by chaotic flows".
 Emilio Hernández-García, Cristóbal López, Zoltan Neufeld
 CHAOS (2002)
 - "An analytical description of spectral hole burning effects in the gain and index spectra of active semiconductors".
 Salvador Balle
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 - "Twin beams, non linearity and walk-off in Optical Parametric Oscillators".
 Roberta Zambrini, Maxi San Miguel
 (2002)

- "Polarization coupling and pattern selection in a type-II optical parametric oscillator". Gonzalo Izus, Maxi San Miguel, Daniel Walgraef
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- "The role of diffusion in the chaotic advection of a passive scalar with finite lifetime".
Cristóbal López, Emilio Hernández-García, Zoltan Neufeld
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- "Thermo-optical pulsation in semiconductor lasers with injected signal: relaxation oscillations, excitability, phase-locking and coherence resonance".
Stephane Barland, Oreste Piro, Salvador Balle, Massimo Giudici, Jorge R. Tredicce (2002)
- "Cavity solitons work as pixels in semiconductors".
Stephane Barland, Jorge R. Tredicce, Massimo Brambilla, Luigi A. Lugiato, Salvador Balle, Massimo Giudici, Tommaso Maggipinto, Lorenzo Spinelli, Giovanna Tissoni, Thomas Knödl, Michael Miller, Roland Jäger
(2002)
- "Low-dimensional dynamical system model for observed coherent structures in ocean satellite data".
Cristóbal López, Emilio Hernández-García
(2002)
- "Subharmonic stochastic synchronization and resonance in neuronal systems".
Dante R. Chialvo, Oscar Calvo, Diego L. Gonzalez, Oreste Piro, Guillermo V. Savino
(2002)
- "Noise and Inertia-Induced Inhomogeneity in the Distribution of Small Particles in Fluid Flows".
Julyan H.E. Cartwright, Marcelo Magnasco, Oreste Piro
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- "Bailout Embeddings, Targeting of KAM Orbits, and the Control of Hamiltonian Chaos".
Julyan H.E. Cartwright, Marcelo Magnasco, Oreste Piro
(2002)
- "Optimal efficiency condition and current reversals in forced underdamped ratchets".
T. Sintes, K. Sumithra
(2002)
- "Enhanced kinetics and free-volume universality in dense aggregating systems".
D. Fry, T. Sintes, A. Chakrabarti, C. M. Sorensen
(2002)
- "Non-linear processes in seagrass-colonization explained by simple clonal growth rules".

T. Sintes, N. Marba, C. Duarte, G. Kendrick
(2002)

6. Conferencias y comunicaciones en congresos

6.1. Conferencias en otros centros

- Maxi San Miguel

"Láseres: Caos espacial, fenómenos cuánticos y nuevas tecnologías"
Coloquio de la Facultad de Física. Universidad de Barcelona. 30 Marzo 2001

- Manuel Matías

"Transition to High-Dimensional Chaos through Quasiperiodic Motion",
Department of Mathematics, Arizona State University (Tempe, AZ, USA). 17
Abril 2001

- Víctor M. Eguiluz

"Scale-free networks with small world behavior"
Departamento de Matemáticas, Universidad Carlos III. Madrid. Junio 2001

- Pere Colet

"Quantum fluctuations in optical patterns"
Institut fuer Angewandte Physik, Westfaelische Wilhelms-Universitaet. Muen-
ster, Alemania. 1-4 Octubre 2001

- Damià Gomila

"Growth laws and Stable droplets in Nonlinear Optics"
Institut für Angewandte Physik, Westfälische Wilhelms-Universität, Münster,
Alemania. 15 Octubre 2001.

- Damià Gomila

"Growth laws and Stable droplets in Nonlinear Optics"
Institut für Festkörpertheorie und Theoretische Optik, Friedrich-Schiller Univer-
sität, Jena, Alemania. 22 Octubre 2001

- Pierre Scotto

"Spatial behaviour of the light produced by Second Harmonic Generation"
Laboratoire PHLAM, Universidad de Lille, Francia. 16 Diciembre 2001

- Raúl Toral

"Juegos de Parrondo"
Departamento de Física Aplicada I, Universidad de Málaga. Marzo 2001

- Tomàs Sintes

"Flame soot aerosols, a crossover from flocculation to gelation".
Universidad de Granada. 29 Noviembre 2001

- Claudio Mirasso

"Dynamical Behaviour of Two Distant Mutually Coupled Semiconductor Lasers".
Arizona Center for Mathematical Science, University of Arizona, USA. Febrero
2001

6.2. Conferencias invitadas en congresos

- Maxi San Miguel
"Fenómenos cuánticos y estructuras espaciales en óptica no lineal".
Fundamentos de Física Cuántica. Santander. 8-9 Febrero 2001
- D. Gomila, P. Colet, G.-L. Oppo y M. San Miguel
"Localized structures in the vector CGLE and in the parametrically forced CGLE"
The CGLE: theoretical analysis and experimental applications in the dynamics of extended systems. Institute for Advanced Studies G. Galilei. Florencia. 21-23 Mayo 2001
- Emilio Hernández-García
"Spatial structures in reacting systems".
International Summer School on Dynamical Barriers, Stirring and Mixing in Geophysical Flows-Mathematical Models and Applications (GEOMIX 2001).
Cargèse, Francia. Agosto 2001
(tres conferencias)
- Emilio Hernández-García
"Spatial patterns in reacting flows: biological and chemical applications".
International Summer School on Atmospheric and Oceanic Sciences (ISSAOS 2001).
Chaos in geophysical flows. L'Aquila, Italia. Septiembre 2001
(dos conferencias)
- Manuel Matías
"Transition to High-Dimensional Chaos in Coupled Oscillators through Quasiperiodic Motion".
International Workshop on Control, Communication, and Synchronization in Chaotic Dynamical Systems. Dresden (D). 11-16 Noviembre 2001
- Manuel Matías
"Synchronization and Desynchronization in arrays of coupled chaotic oscillators"
International Seminar on Control, Communication, and Synchronization in Chaotic Dynamical Systems. Dresden (D). 19-23 Noviembre 2001
- Jan Danckaert
"Polarisation dynamics of vertically-emitting semiconductor lasers"
CLEO/Europe-EQEC focus meeting on Non Linear Devices And Applications to Photonics. Munich. 19-22 Junio 2001
- Raúl Toral
"Charge and spin transport, superconductivity and non-linear phenomena".
Stochastic Processes workshop. Aveiro (Portugal). 10-12 Abril 2001
(tres conferencias)
- Raúl Toral
"Parrondo's Games: Effect of Cooperation"
XIV Italian Meeting on Game Theory and Applications. Ischia (Italia). 11-14 Julio 2001

- Claudio R. Mirasso
"Chaos Synchronization of Mutually Coupled Semiconductor Lasers: Theoretical Analysis"
WIAS Workshop "Dynamics of Semiconductor Lasers". Berlin, Alemania. 13-15 Septiembre 2001

- Oreste Piro
"Transport of neutrally bouyant impurities in fluid flows: a case of bailout embedded dynamics".
Eurpean Geophysical Society 26th General Assembly. Marzo 2001

- Oreste Piro
"Mixing of finite size neutral impurities and bailout embeedings".
Workshop on Active Chaotic Flows. Los Alamos Nation Laboratory. Los Alamos. Abril 2001

- Oreste Piro
"Diffusion in complex fluids".
Environmental fluid dynamics 2001. Campus Universitari de la Mediterrànea. Vilanova i la Geltru. Julio 2001

6.3. Comunicaciones en congresos

- Raúl Toral
"Analytical and Numerical Studies of Noise-induced Synchronization of Chaotic Systems".
Physics of Synchronization and Information in Stochastic Dynamics. Dresden, Alemania. 1-5 Abril 2001
(Panel)

- Raúl Toral
"Monte Carlo Methods for Non-extensive Thermodynamics".
Nonextensive Thermodyamics and Physical Applications (NEXT2001). Cagliari, Italia. 23-31 Mayo 2001

- Rafael Salazar, Raúl Toral
"Weakly nonextensive thermostatics and the Ising model with long-range interactions".
Nonextensive Thermodyamics and Physical Applications (NEXT2001). Cagliari, Italia. 23-31 Mayo 2001

- Tomàs Sintès
"Comunicación: Energetic efficiency in isothermal ratchets".
Europhysics conference on Computational Physics-2001. Aachen, Alemania. 4-8 Septiembre 2001
(Póster)

- M G. Zimmermann, V. M. Eguiluz
"Evolution of Cooperative Networks and the Emergence of Leadership".

- 7th International Conference of the Society for Computational Economics. Yale University, New Haven, Connecticut (USA). Junio 2001
- V. M. Eguiluz, M.G. Zimmermann, M. San Miguel
"Dynamics of Cooperation and the Emergence of Social Structure in an Adaptive Environment"
International Conference on Dynamical Networks in Complex Systems. Kiel, Alemania. Julio 2001
 - Konstantin Klemm, Víctor Eguiluz
"Highly clustered scale-free networks"
International Conference on Dynamical Networks in Complex Systems. Kiel, Alemania. Julio 2001
(Póster)
 - Víctor M. Eguiluz, Emilio Hernández-García y Oreste Piro
"Wall effects on nonlinear dissipative waves in oscillating med"
International conference on Waves and Wave Turbulence. Nyborg, Dinamarca. Agosto 2001
(Póster)
 - M G. Zimmermann, V. M. Eguiluz, M. San Miguel, M. Matías
"Cooperation, Adaptation and the Emergence of Leadership"
Sixth SIAM Conference on Applications of Dynamical Systems. Snowbird, Utah, USA. Mayo 2001
(Póster)
 - C. López, E. Hernández-García, Z. Neufeld
"Lagrangian studies of chaotic advection of decaying substances: the role of diffusion".
XXVI General Assembly of the European Geophysical Society. Nice, Francia. Marzo 2001
(Póster)
 - Maxi San Miguel, Pere Colet, Gonzalo Izús, M. Santagiustina, Pierre Scotto, Roberta Zambrini
"Transverse effects in OPO"
Reunión PICS 851 Optical Parametric Oscillators, Institut Henri Poincare. París. 22 Marzo 2001
 - R. Zambrini, S. Barnett, M. San Miguel, P. Colet
"Patterns sustained by quantum noise"
International Workshop Coherent Evolution in Noisy Environment. Dresden, Alemania. 21-25 Mayo 2001
(Póster)
 - Pierre Scotto, Maxi San Miguel
" Spatial behaviour of light in Second Harmonic Generation "
7th International Conference on Squeezed States and Uncertainty Relations (ICSSUR 2001). Boston, Massachusetts, USA. 4-8 Junio 2001

- D. Gomila, P. Colet, G.-L. Oppo, M. San Miguel
"Growth laws and circular domain walls in nonlinear optics",
European Science Foundation PHASE. "Phase Domains and Spatial Solitons in
Nonlinear Optics". Network meeting. París. 5-8 Junio 2001
- M. Bache, P. Scotto, R. Zambrini, M. San Miguel
"Spatial correlations of transverse structures in intra-cavity second-harmonic
generation"
European Science Foundation PHASE. "Phase Domains and Spatial Solitons in
Nonlinear Optics". Network meeting. París. 5-8 Junio 2001
- R. Zambrini, S. Barnett, M. San Miguel, P. Colet
"Optical patterns sustained by quantum noise"
Eighth Rochester Conference on Coherence and Quantum Optics (CQO8).
Rochester, New York, USA. 13-16 Junio 2001
(Póster)
- G. Izús, M. San Miguel, M. Santagiustina, D. Walgraef
"Polarization coupling and transverse patterns in OPO"
CLEO/Europe-EQEC focus meeting on Non Linear Devices And Applications
to Photonics. Munich, Alemania. 19-22 Junio 2001
- D. Gomila, P. Colet, M. San Miguel, G. L. Oppo, A. Scroggie
"Growth Laws and Circular Domain Walls in Nonlinear Optics"
CLEO/Europe-EQEC focus meeting on Non Linear Devices And Applications
to Photonics. Munich, Alemania. 19-22 Junio 2001.
(Postdeadline poster)
- Josep Mulet, Salvador Balle, Claudio Mirasso, Maxi San Miguel
"Tranverse and polarization mode selection in Vertical-Cavity Surface-Emitting
Lasers".
CLEO/Europe-EQEC focus meeting on Non Linear Devices And Applications
to Photonics. Munich, Alemania. 19-22 Junio 2001
- Alessandro Scirè, Josep Mulet, Claudio R. Mirasso, Maxi San Miguel
"Intensity and polarization self-pulsations in Vertical-Cavity Surface-Emitting
Lasers".
CLEO/Europe-EQEC focus meeting on Non Linear Devices And Applications
to Photonics. Munich, Alemania. 19-22 Junio 2001
(Póster)
- Alessandro Scirè, Josep Mulet, Claudio R. Mirasso, Maxi San Miguel
"Intensity and polarization self-pulsations in Vertical-Cavity Surface-Emitting
Lasers"
VISTA Meeting. París, Francia. 11-13 Junio 2001
- F. Marino, M. Giudici, S. Barland, S. Balle
"Stochastic resonance in an excitable optical system".
VISTA Meeting. París, Francia. 11-13 Junio 2001

- M.Giudici, S. Barland, S. Balle, J.R. Tredicce
"Transverse effects in broad area VCSELs with optical injection".
VISTA Meeting. París, Francia. 11-13 Junio 2001
- Josep Mulet, Salvador Balle, Claudio R. Mirasso, Jan Danckaert, Maxi San Miguel
"Mesoscopic modeling of the tranverse and polarization dynamics in Vertical-Cavity Surface-Emitting Lasers: Influence of thermal lensing".
VISTA Meeting. París, Francia. 11-13 Junio 2001
- V.M. Eguíluz, E. Hernández-García, O. Piro.
"Wall effects on nonlinear dissipative waves in oscillating media".
Waves and Wave Turbulence. Nyborg, Dinamarca. Agosto 2001
(Póster)
- D. Gomila, P. Colet, G.-L. Oppo, M. San Miguel
"Growth laws and stable droplets in nonlinear optics".
Quantum Electronics and Photonics 15 (QEP-15). Glasgow, Reino Unido. 3-6 Septiembre 2001
(Póster)
- R. Zambrini, S.M. Barnett, M. San Miguel, P. Colet
"Patterns sustained by quantum noise in optical parametric oscillators".
International Workshop on Dynamics of Nonlinear Optical Systems. Les Houches, Francia. 24-28 Septiembre 2001
- Pierre Scotto, Pere Colet, Maxi San Miguel
"Spatial behavior of light in second harmonic generation".
International Workshop on Dynamics of Nonlinear Optical Systems. Les Houches, Francia. 24-28 Septiembre 2001
- F. Marino, M.Giudici, S. Barland, S. Balle
"Stochastic resonance in an excitable optical system"
International Workshop on Dynamics of Nonlinear Optical Systems. Les Houches, Francia. 24-28 Septiembre 2001
- S. Barland, O.Piro, M.Giudici, S. Balle, J.R. Tredicce
"Thermal effects in braod area semiconductor amplifiers excitability, coherence resonance and phase locking of an excitable system".
International Workshop on Dynamics of Nonlinear Optical Systems. Les Houches, Francia. 24-28 Septiembre 2001
- Josep Mulet, Claudio R. Mirasso, Salvador Balle, Maxi San Miguel.
"Tranverse and Polarization Mode Selection in Vertical-Cavity Surface-Emitting Lasers".
SPIE, Physics and Simulation of Optoelectronic Devices IX. San José, USA.
"Photonics West". San Jose, USA. 2001
- Claudio Mirasso, Josep Mulet, Tilmann Heil, Ingo Fischer.
"Dynamical Behaviour of Two Distant Mutually Coupled Semiconductor Lasers".

SPIE, Physics and Simulation of Optoelectronic Devices IX. San José, USA.
"Photonics West". San Jose, USA. 2001

- O. Calvo, I. Gomes, C. R. Mirasso, R. Toral
"Experimental Observation of Coherence and Stochastic Resonances in an Electronic Chua Circuit".
6th Experimental Chaos Conference. Postdam, Alemania. Junio 2001

- Claudio Mirasso, Josep Mulet, Tilmann Heil, Ingo Fischer
"Dynamical Behaviour of Two Distant Mutually Coupled Semiconductor Lasers".
Workshop Physics of Information and Synchronization in Stochastic Dynamics.
Dresden, Alemania. 1-4 Abril 2001
(Póster)

- P. Scotto M. Kolobov, P. Colet, M. San Miguel
"Spatial quantum properties in traveling wave SHG - Numerical approach to superresolution".
QUANTIM Meeting. París. 14-16 Mayo 2001

- Pere Colet
"Vectorial Kerr Cavity Solitons and Parallel information processing in type II SHG".
QUANTIM Meeting. París. 14-16 Mayo 2001

- R. Zambrini, S. Barnett, M. San Miguel, P. Colet
"Patterns sustained by quantum noise"
QUANTIM Meeting. París. 14-16 Mayo 2001

- Morten Bache, Roberta Zambrini, Pierre Scotto, Maxi San Miguel
"Quantum fluctuations in SHG"
QUANTIM Meeting. París. 14-16 Mayo 2001

- Pere Colet
"Occult Workpackage 6: Theory and modeling".
Kick-off meeting proyecto Occult. Mallorca. 10-11 Septiembre 2001

- Roberta Zambrini
"Quantum fluctuations in optical patterns"
Coherent Evolution in Noisy Environment. Max-Planck-Institut für Physik komplexer Systeme. Dresden, Germany. 30 Abril-12 Mayo 2001

- Josep Mulet, Claudio R. Mirasso, Tilmann Heil, Ingo Fischer
"Dynamical behavior of two distant mutually-coupled semiconductor lasers".
Photonics West. San Jose, USA. 2001

7. Otras actividades

7.1. Memorias de tercer ciclo

- "Polarization and Intensity Noise in Vertical-Cavity Surface-Emitting Lasers".

Josep Mulet

Memoria de Investigación UIB. Directores: C. Mirasso, M. San Miguel. Diciembre 2001

- "Growth laws and stable droplets close to the modulational instability of a domain wall".

Damià Gomila

Memoria de Investigación UIB. Director: P. Colet. Diciembre 2001

- "Quantum fluctuations in a continuous vectorial Kerr medium model".

Roberta Zambrini

Memoria de Investigación UIB. Director: M. San Miguel. Diciembre 2001

7.2. Estancias en otros centros

- Manuel Matías

Department of Mathematics, Arizona State University. Tempe, AZ, USA. 4 Enero-28 Junio 2001

- Josep Mulet

Instituto de Física de Cantabria. 9-13 Julio 2001.

- C. Mirasso

Arizona Center for Mathematical Science. University of Arizona, USA. 27 Enero-2 Marzo 2001.

7.3. Organización de congresos

- Maxi San Miguel: miembro del Program Committee de la "Physics and Simulation of Optoelectronics Devices IX". Part of SPIE Photonics West. San Jose, California. Enero 2001

- Raúl Toral: organizador de la sesión sobre "Parrondo's Games" en el congreso XIV Italian Meeting on Game Theory and Applications. Ischia, Italia. 11-14 Julio 2001

- Emilio Hernández-García: miembro del Comité Científico de la Reunión Española de Física Estadística (FISES), desde 1999

- Emilio Hernández-García: convener de la sesión NP.9 Transport and Mixing: Theory, Modelling and Observations de la XXVI General Assembly of the European Geophysical Society. Niza, Francia. Marzo 2001

- Emilio Hernández-García: miembro del Comité Científico de la Conferencia Waves and Wave Turbulenc. Nyborg, Dinamarca. Agosto 2001