

Manuel García VELARDE

CV

<http://www.ucm.es/info/fluidos>

Manuel Garcia **VELARDE**, Almeria (España/Spain), 14 Sept. 1941/Sept. 14th, 1941.

Estado Civil/Family status: Casado/Married (esposa/wife: Maria del Pilar; hijos/children: Alberto-1966, Uriel-1969, & Esther-Adelaida-1977; grand children: Luis, Daniel, Javier & Diego).

Situacion actual/Present Professional Status: Honorary (**Emeritus**) **Professor/Catedrático (Emérito), Honorífico**, Instituto Pluridisciplinar **UCM**.

Quinquenios docentes reconocidos: 6 (max.) (Civil Service Top Teaching Achievement award).

Sexenios investigadores reconocidos: 6 (max.) (Civil Service Top Research Achievement award).

Calificacion Comunidad de Madrid: 10 (max.) (Yearly Civil Service Top Research Achievement award).

HONOR

1. 1981 Best Teacher award, NATO ASI on NONLINEAR PHENOMENA AT PHASE TRANSITIONS AND INSTABILITIES, Geilo (Norway).
2. 1991 Premio FISICA (Investigacion cientifica), Real Academia de Ciencias Exactas, Fisicas y Naturales (Madrid).
3. 1992 Premio "Creativity", CAPIRE Foundation (Firenze/Florenzia).
4. 1993 Member *Academia Europæa*.
5. 1994 Docteur *Honoris Causa*, Universite de Provence-Aix-Marseille I (France).
6. 1994 Palmes Academiques, Republique Française.
7. 1996 Medaille RAMMAL (Societe Française de Physique & Fondation Ecole Normale Supérieure).
8. 2000 Member Real Academia de Doctores (Spain).
9. 2002 *Festschrift* (60th birthday) "Spatio-Temporal Complexity" (Editor: G. Nicolis) Special Issue: *International Journal of Bifurcation and Chaos* **12** (2002) 2305-2653.
10. 2003 Premio *DuPont* de la Ciencia (Spain & Portugal).
11. 2003 Uva de Oro/Gold Grape (Casa de Almeria y de la Alpujarra en Madrid/Almeria in Madrid).
12. 2006 "Medalla", Real Sociedad Española de Fisica/Medal of Spanish Physical Society.
13. 2009 "Paul Harris Fellow", Medal of Foundation Rotary International.
14. 2010 Doctor *Honoris Causa*, Chernyshevsky Saratov State University (Russia)
15. 2013 *Festschrift* (70th birthday) "Without Bounds: A Scientific Canvas of Nonlinearity and Complex Dynamics", Springer-Verlag, Berlin, 801 pp., (Editors: R. G. Rubio, Yu. S. Ryazantsev, V. M. Starov, G.-X. Huang, A. P. Chetverikov, P. Arena, A. A. Nepomnyashchy A. Ferrús, E. G. Morozov)
16. 2013 Ordre N. Mérite (*officier*, Francia/France).
17. 2014 *Festschrift* (70th birthday) *Advances in Colloid and Interface Science*, vol 206 (April 2014), Elsevier, Amsterdam, 436 pp. (editors: R. Miller, R. G. Rubio, V. M. Starov).
18. 2014 Member European Academy of Sciences (EURASC).
19. 2015 Blaise PASCAL Medal (Physics) EURASC.

20. 2019 CISM 50th Anniversary Medal

EDUCACION/EDUCATION

- (i) Universidad Complutense de Madrid (Espana) 1959-1963: Licenciatura en Ciencias Fisicas/ PHYSICS (Graduate and M. Sc.).
- (ii) Universidad Complutense de Madrid (Espana) 06-11-1968: Doctor en Ciencias Fisicas (equivalent to Ph. D.), "Sobresaliente *cum laude*". Director: M. Castans. Presidente Tribunal: F. Navarro Borrás (deceased).
- (iii) Universite Libre de Bruxelles (Belgique) 20-01-1970: Docteur en Sciences Physiques (equivalent to Ph. D.), "Avec la *plus grande distinction*". Director: P. Resibois (deceased). President du Jury: I. Prigogine (deceased).

RESEARCH AND/OR EXPERIENCE/POSITIONS HELD/ EXPERIENCIA (docente o/e investigadora un mes o mas)

A. Professional career

- 1. **1963-65** Universidad Complutense (Madrid): Ayudante/Instructor/Teaching Assistant "Mecanica Teorica" (4º Fisicas) & Ayudante/Instructor/Teaching Assistant "Ecuaciones Diferenciales (Analisis Matematico)" (3º Fisicas).
- 2. **1963-65** Junta de Energia Nuclear, Division de Fisica Teorica (Madrid): Becario predoctoral.
- 3. **1964-65** Escuela Tecnica Superior de Arquitectura (Madrid): Prof. Encargado de curso de "Fisica".
- 4. **1965-69** Universite Libre de Bruxelles (Belgica): Ph. D./Doctorando (1965-68) & Chercheur (1968-69).
- 5. **1969-71** University of Texas at Austin (EE.UU.): Faculty Associate (Center of Excellence, National Science Foundation, EE.UU.) equivalente a Assistant Professor.
- 6. **1970** University of Montana at Bozeman (EE.UU.): Investigador Visitante/Guest Researcher (National Science Foundation), July-August.
- 7. **1971-80** Universidad Autonoma de Madrid: Profesor Agregado/Associate Professor, Catedratico/(Full) Professor [20-3-1979] ("Terminologia/ Termodinamica Estadistica" & "Mecanica Estadistica"/Statistical Physics) & Director-fundador Departamento de "Fisica de Fluidos"/**Chairman & founder Department of Fluid Physics**.
- 8. **1979-93** U.N.E.D./Spanish Open University: Catedratico/Full Professor & Director Departamento de "Fisica Fundamental" (1979-87; Julio 1980 traslado oficial de la Universidad Autonoma de Madrid) y fundador/Chairman & **founder Department of Physics**.
- 9. **1993-2011**. Universidad Complutense de Madrid: (PROPIO) Professor of Physics/Catedratico de Fisica Aplicada/Fisica de Fluidos (Programa **PROPIO-MEC**). Director Unidad de Fluidos y cofundador/**co-founder Instituto Pluridisciplinar**. 1997-98; 2008-11, Director Institute (Civil Service/Registro personal: 01EC1888 (30-3-79)/2713014468A0500).
- 10. **1993-96** ATENEO Cientifico, Artistico y Literario de Madrid (1993 y 1994 Fundacion del BBV, Director de la CATEDRA de FISICA/BBV Foundation Chair for Science for the Lay audience.

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B. Invited/Visiting positions, etc

1. 1972-73 Universitet i Trondheim-N.T.H. (Noruega), Institutt for Teoretisk Fysikk: Guest Researcher (Norges Allmennvitenskapelige Forskningsrad), December 1972-January 1973.
2. 1974 Universite Paris XI, Orsay (Francia), Physique Theorique: Chercheur etranger invite (C.N.R.S.), January.
3. 1974 Universite Paris VI (Francia), Physique Theorique des Liquides: Professeur invite, November-December.
4. 1974 C.E.N. Saclay (Francia), Physique Theorique, Orme des Merisiers: Chercheur etranger invite (comme Ingenieur), November-December.
5. 1975 Universitet i Trondheim-N.T.H. (Noruega), Institutt for Teoretisk Fysikk: Guest Researcher (Norges Allmennvitenskapelige Forskningsrad), July-November.
6. 1976 University of London (U.K.), Chemistry Department, Chelsea College: Visiting Research Associate; Mathematics Department, Imperial College: Guest Researcher, July-August.
7. 1976-80 Universite de Provence (Aix-Marseille I) (Francia): Invited Professor (A.T.P. Internationale C.N.R.S.). One or several months per year over a five-year period.
8. 1978 Universitet i Trondheim-N.T.H. (Noruega), Institutt for Teoretisk Fysikk: Invited Professor (Norges Allmennvitenskapelige Forskningsrad), July-November.
9. 1984 Universite Aix-Marseille II (Francia), Institut de Mecanique des Fluides: Professeur invite, January-February.
10. 1984-94 Los Alamos National Laboratory, N. M. (EE.UU./USA): Consultant. Several weeks or months per year.
11. 1985 Universite de Grenoble (Francia): Professeur invite, May.
12. 1986 University of Science and Technology (HUST, Wuhan, Huazhong, Central China, Rep. Pop. China): Invited Lecturer (20h-Lecture Series on Hydrodynamic Instabilities), January.
13. 1988 University of Sofia (Bulgaria), (Centennial/Centenario de la Universidad: Invited Lecturer, December.
14. 1989 Universidad de Paris-VI (Francia): Professeur invite, May.
15. 1990 Stanford University (EE.UU.): Guest Researcher (Consultant), September.
16. 1993 Stanford University (EE.UU.): Guest Researcher (Consultant), August.
17. 1995 Universite Aix-Marseille III (Francia): Professeur invite, November.
18. 1996 Cambridge University (U.K.), DAMPT: (BBV Foundation) Visiting Professor, April-June.
19. 1997 University of California, Berkeley (EE.UU.): Visiting Scientist (Consultant), August-September.
20. 2000 Universite de Marne-La Vallee, Paris (Francia): Professeur invite, April.
21. 2000 Universite Libre de Bruxelles (Belgica): Professeur invite, November.
22. 2002-05 International Center for Mechanical Sciences (CISM, Udine, Italia): Rector.

23. 2006 Université Libre de Bruxelles (Belgica): Chaire Internationale, March.
24. 2006 University of California, Santa Barbara (EE.UU.): Del Amo Visiting Scholar & Visiting Professor, June-August.
25. 2007 East China Normal University (Shanghai): Visiting Professor, July.
26. 2011-present Wessex Institute of Technology (WIT, Southampton, UK): Adjunct Professor.
27. 2012 University of California, Irvine (EE.UU.): Del Amo Visiting Scholar, July-August.

N.B.: I have also been doing research and/or delivering lectures/seminars in several other Institutions for periods of one to two weeks (collaboration agreements or short-research grants using Bilateral Treaties, NATO CRGs, EU, Volkswagen Stiftung grant, etc.).

ADVISORY OR CONSULTANCY BOARD OF LABORATORIES OR SOCIETIES, COMMITTEE MEMBERSHIP/COMITES INTERNACIONALES, etc.

1. Consultant LOS ALAMOS National LAB-CNLS (New Mexico, USA., under contract: 1984-94).
2. Committee "Liquids", EPS (1982-94, **co-founder**).
3. MEC: Comision de Reforma de la Educacion 10-16 anos, Madrid (1983).
4. ESA: European Space Agency, Committee "Materials & Fluids in Microgravity" (1986-88), "Surface Phenomena" (1990-93) & Peer Reviewer.
5. IUPAP Commission C3 "Statistical Physics" (1987-93).
6. Internat. Centre Heat & Mass Transfer, Scientific Council, Ankara, Turkey (1987-present).
7. CERET, Centre Europeen de Thermodynamique-Paris (1990-94, **co-founder**).
8. NATO, Panel Member "Chaos, Order and Patterns: Aspects of Nonlinearity" (1990-93).
9. Association Recherche et Environnement, Aix-Marseille, Conseil Administration, (1993-present, **co-founder**).
10. EEC-Commission, Human Capital & Mobility, Panel member (Physics) Bruselas (1992-94).
11. European Low Gravity Research Association, Consultant: ELGRA-White Book European Low-Gravity Physical Sciences in Retrospect and in Prospect, Peer Review Author: Fluid Physics & Critical Phenomena (1994-95).
12. ESA-MAC: Microgravity Advisory Committee (1994-97).
13. ELGRA, Vicepresident (1995-97), President (1997-99).
14. EU, Training and Mobility of Researchers, Panel Member (Physics: Fellowships & Networks) Bruselas (1995).
15. Association for the *Collegium Catedra* FBBV, President (1999).
16. International Centre for Mechanical Sciences (CISM), Udine, Scientific Council (2002-present).
17. International Union of Theoretical and Applied Mechanics, IUTAM Conference Committee (2002-2010).
18. *Academia Europæa*, Council (2002-2008).

19. European Science Foundation (ESF)-European Space Science Committee (ESSC) (2006-2009).
20. Real Academia de Doctores (Spain), Presidente/Chair Sección Ciencias Experimentales (2007-2009).
21. International Center "Nonlinear Dynamics and Complex Systems", Pescara, Scientific Council (2009).
22. Comité Ciencias Experimentales, ACUCM, Castilla-La Mancha (Presidente).
23. Comité Internacional Expertos Evaluación de la Física en la Universidad Libre de Bruselas (2009).
24. Jurado Internacional Evaluación Laboratorios de Excelencia en Francia (LABEX Jury), President (2010-11).
25. Jurado Internacional Evaluación de Campus de Excelencia (IDEX Jury) (2011).
26. Jurado Evaluación AERES Laboratorio PMMH (ESPCI), Paris, Presidente (2012)
27. International Steering Committee/Comité d'Orientation Scientifique, Université Aix-Marseille (2015)
28. HCERES (Francia), Comité d'Evaluation Université Bretagne Occidentale (UBO) (2016)
29. ESF College of Expert Reviewers (2016-present)

EDITORIAL/ADVISORY BOARDS/COMITES EDITORIALES (Present and Past membership/ Ha sido o es miembro)

1. Journal of Non-Equilibrium Thermodynamics (1976-present; **co-founder**).
2. International Journal of Heat and Mass Transfer (1977-present).
3. Letters in Heat and Mass Transfer (1977-present).
4. Journal de Physique (1977-84).
5. Journal de Physique-Lettres (1977-84).
6. Reports on Mathematical Physics (1977-84).
7. Physicochemical Hydrodynamics (1979-88; **co-founder**).
8. Applied Mechanics Reviews (1979-reviewer).
9. Revista Española de Física (1987-93).
10. Portugaliae Physica (1990).
11. Anales de Física (1992-99).
12. Nonlinear Processes in Geophysics (1993-96; **co-founder**).
13. International Journal Bifurcation and Chaos (1995-present).
14. Revue Marocaine des Sciences Physiques (1998).
15. Synergetics Series, Springer-Verlag, Berlin, Heidelberg & N.Y. (1999-2006).
16. Comptes Rendus de l'Académie des Sciences, Série II b (Mécanique) Paris (1999-2011).
17. European Physics Journal, Special Topics (Discussion & Debate), Co-Editor (2009; **co-founder**).

"Referee" or "(peer) reviewer" of several scientific journals, research projects (NSF-USA, NASA, ESA, CEE-EU, NATO, NOBEL Committee for Physics, etc.), University appointments (several universities in Europe and in the USA)/Juez de varias revistas internacionales y en numerosísimas ocasiones, de proyectos de investigación de

diversas Agencias; Miembro o Presidente de Tribunal de Tesis Doctoral y de nombramiento-promoción profesorado, particularmente en Francia, EE.UU. y U.K.

PROFESSIONAL SOCIETIES/SOCIEDADES CIENTIFICAS Present membership: **Academia Europaea**, Real Sociedad Española de Física, Real Academia de Doctores de España.

CHAIRPERSON-DIRECTOR-ORGANIZER/DIRECTOR-PRESIDENTE COMITE INTERNACIONAL

1. 1972 Workshop/Reunion STATISTICAL PHYSICS/FISICA ESTADISTICA, Sevilla, April (organizer and speaker).
2. 1976 Summer School and Workshop/Escuela-Reunion Hispano-Francesa, FISICA DE FLUIDOS, Sevilla, September (with P. G. de Gennes).
3. 1980 3rd International Conference, PHYSICOCHEMICAL HYDRODYNAMICS, Madrid, April.
4. 1983 NATO Advanced Study Institute, NON-EQUILIBRIUM COOPERATIVE PHENOMENA IN PHYSICS AND RELATED FIELDS, El Escorial, August (with F. T. Arecchi & M. O. Scully).
5. 1986 International Symposium/Jornadas Internacionales, FLUID PHYSICS/FISICA DE FLUIDOS, Fundacion Ramon Areces, Madrid, May.
6. 1986 NATO Advanced Study Institute and 2nd EPS LIQUIDS SECTION International Conference, PHYSICOCHEMICAL HYDRODYNAMICS: INTERFACIAL PHENOMENA, La Rabida, Huelva, July.
7. 1987 Workshop/Jornadas, FLUID PHYSICS/FISICA DE FLUIDOS, Cordoba, June.
8. 1987 International Symposium/Jornadas Internacionales, SYNERGETICS, ORDER & CHAOS (to honor Prof. Dr. H. HAKEN), Fundacion Ramon Areces, Madrid, October.
9. 1990 UCM-Summer School/Curso de verano, Universidad Complutense, PROGRESS IN FLUID PHYSICS, Aguadulce (Almeria), August.
10. 1990 International Symposium/Jornadas Internacionales, PHYSICOCHEMICAL HYDRODYNAMICS/FISICOQUIMICA DE FLUIDOS, Fundacion Ramon Areces, Madrid, October.
11. 1991 UNED-Summer School/Curso de verano, FISICA PARA TODOS: COMPLEJIDAD, ORDEN Y CAOS EN LA NATURALEZA, Avila, July.
12. 1991 UCM-Summer School/Curso de verano, Universidad Complutense, HYDRODYNAMIC INSTABILITIES AND INTERFACIAL PHENOMENA, Aguadulce (Almeria), August.
13. 1992 UCM-Summer School/Curso de verano, Universidad Complutense, WAVES, Aguadulce (Almeria), July.
14. 1992 4th. IUPAP-International Conference TEACHING MODERN PHYSICS. STATISTICAL PHYSICS, Badajoz, July.
15. 1993 International Symposium/Jornadas Internacionales, INTERFACIAL PHENOMENA ON EARTH AND IN SPACE, Madrid, February.
16. 1993 UCM-Summer School/Curso de verano, Universidad Complutense, TURBULENCE, Aguadulce (Almeria), July.

17. 1994 Summer School/Curso de verano (para profesores de Bachillerato/for High School teachers), ATENEO de Madrid e Instituto de Bachillerato "Cervantes", Laboratorio Multimedia en la Enseñanza de la Física (Optica con Laser, LAO, Experimentos con películas), July.
18. 1994 Summer School/Curso de verano (para profesores de Bachillerato/for High School teachers), ATENEO de Madrid, CAOS Y FRACTALES, July.
19. 1994 UIMP-Summer School/Curso de verano, Universidad Internacional "Menendez Pelayo" (UIMP), PCH School: CHAOS AND TURBULENCE, Santander, September (with A. Linan).
20. 1994 European Low Gravity Research Association (ELGRA) XIIIth Assembly, Madrid, December (as Chairman Organizing Committee).
21. 1995 UIMP-Summer School/Curso de verano, Universidad Internacional "Menendez Pelayo" (UIMP), PCH School: EXPERIMENTAL TECHNIQUES AND NUMERICAL METHODS, Santander, July (with A. Linan).
22. 1995 UCM-Summer School/Curso de verano, Universidad Complutense, POLYMERIC MATERIALS: PHYSICS, CHEMISTRY AND HYDRODYNAMICS, Aguadulce (Almeria), July (with E. Riande).
23. 1995 International Symposium/Jornadas Internacionales, CHAOS AND FRACTALS. THE NEW PARADIGM, Fundacion Ramon Areces, Madrid, December.
24. 1996 UIMP-Summer School/Curso de verano, Universidad Internacional "Menendez Pelayo" (UIMP), PCH School: DROPS, BUBBLES AND FILMS, Santander, September.
25. 1997 Joint Xth European and VIth Russian Symposium, PPhysical Sciences in Microgravity, St. Petersburg-Kijy Island (on ship), Russia, June (with V. I. Polezhaev, Russia, and F. Rosenberger, USA).
26. 1997 EU Network Workshop, PATTERNS, WAVES AND DEFECTS, Coordinator and lecturer, Madrid, July-August.
27. 1997 Summer School & Workshop/Curso de verano, Gulbenkian International Advanced Course INTRODUCTION TO DYNAMICAL SYSTEMS: THEORY FOR BIOSCIENCE STUDENTS, Porto (Portugal), August.
28. 1998 EU Network Workshop, FROM UNITS TO SYNERGETICS IN NEUROBIOLOGY, Coordinator and lecturer, Madrid, February.
29. 1998 UNESCO sponsored Spring School & Workshop, FLUID PHYSICS AND NON LINEARITY, Marrakech (Morocco), April (with M. Belhaq & E. Guyon).
30. 1998 EU Network Workshop, TIME SERIES ANALYSIS, DATA PROCESSING, DELAY PROBLEMS, NONLINEAR WAVES, STOCHASTIC PROCESSES, ETC. IN NEUROBIOLOGY AND OTHER REALMS OF SCIENCE, Coordinator and lecturer, Madrid, May.
31. 1998 Workshop, INTERNAL WAVES IN THE ALBORAN SEA, THE STRAIT OF GIBRALTAR AND OTHER STRATIFIED MEDIA, Madrid, July.
32. 1998 IUPAP-XX SATELLITE Workshop, INTERFACIAL PHENOMENA, Madrid, July.
33. 1998 EU Network Workshop, LATTICE DYNAMICS, NEURAL NETWORKS & BRAIN DYNAMICS, Madrid, November.

34. 1998 EU Network Workshop, INTERFACIAL PHENOMENA, Madrid, November-December.
35. 1999 European Low Gravity Research Association (ELGRA) Biennial Meeting and General Assembly, Roma, March (as ELGRA President).
36. 1999 1st Symposium Catedra FBBV "Permeability of Ideas and Human Knowledge", Madrid, April (with J. Urrutia).
37. 1999 EU-Network & UCM-Summer School/Curso de verano, NONLINEARITY: PATTERNS AND DEFECTS, SOLITONS, CHAOS AND TURBULENCE, El Escorial (Madrid), July.
38. 1999 UIA-Summer School/Curso de verano, PHYSICOCHEMICAL HYDRODYNAMICS, La Rabida (Huelva), August (with C. Gallegos).
39. 1999 Workshop, DYNAMICAL SYSTEMS, CEREBELLAR DYNAMICS AND (NEURO) ROBOTS, Madrid, October.
40. 1999 Workshop, INTERFACIAL PHENOMENA AND DIMENSIONLESS GROUPS, Madrid, December.
41. 2000 Workshop, DYNAMICAL SYSTEMS AND NEUROINSPIRED ROBOTS, Madrid, March.
42. 2000 Workshop, DISSIPATIVE SOLITONS, NONLINEAR EXCITATIONS (lattices, etc.) AND HIGH-T SUPERCONDUCTIVITY, Madrid, June.
43. 2000 CISM-Summer School/Curso de Verano, INTERFACIAL PHENOMENA, THE MARANGONI EFFECT, INSTABILITY, WAVES AND CONVECTIVE FLOWS, Udine (Italy), July (with R. K. Zeytounian).
44. 2000 Ciclo de Conferencias, PROCESOS FISICOQUIMICOS REACTIVOS-DIFUSIVOS E INNOVACIONES EN EL TRATAMIENTO DE INFECCIONES OSEAS EN CIRUGIA ORTOPEDICA, Real Academia de Doctores, Madrid, November (with C. Rueda).
45. 2001 Workshop, NONLINEAR DYNAMICS (LATTICES, WAVES, INSTABILITIES AND FLUCTUATIONS), Madrid, January.
46. 2001 EU ICOPAC Network & UCM Summer School & Workshop/Curso de verano, INTERFACIAL PHENOMENA: WETTING AND SPREADING OF LIQUIDS, El Escorial (Madrid), July (with R. Glez. Rubio).
47. 2002 Workshop, NEURONAL FLOWS, MOTRICITY AND NEUROINSPIRED ROBOTS, Madrid, March.
48. 2002 EU-Workshop, FALLING FILMS AND NONLINEAR LONG WAVES, Madrid, December.
49. 2003 Workshop, FALLING FILMS, WETTING AND SPREADING PROCESSES, Madrid, August.
50. 2004 Workshop, STOCHASTIC NONLINEAR LATTICE DYNAMICS, Madrid, March.
51. 2004 Workshop, PHYSICOCHEMICAL PROBLEMS OF THE COFFEE EXPRESSO BEVERAGE, Madrid, March.
52. 2004 Workshop, MODELLING NEURODYNAMIC PROCESSES, Madrid, April.
53. 2004 Workshop, SUPERCONDUCTIVITY IN NONLINEAR LATTICES, Madrid, August.

54. 2005 EU Network Workshop, SPATIAL TEMPORAL PATTERNS FOR ACTION-ORIENTED PERCEPTION IN ROVING ROBOTS, Madrid, January.
55. 2005 Workshop, SOLITONS IN ANHARMONIC LATTICES, Madrid, February.
56. 2005 Workshop, SPREADING DYNAMICS (SURFACTANTS, ETC.), Madrid, March.
57. 2005 Workshops, FALLING FILMS, Madrid, April, August & November.
58. 2005 Workshop, STOCHASTIC TRANSPORT AND ACTIVE BROWNIAN MOTORS, Madrid, May.
59. 2005 Workshop, INTERFACIAL PHENOMENA, PATTERNS AND WAVES, Madrid, August.
60. 2005 Workshop, POLYMERS AT SURFACES, Madrid, September.
61. 2005 Workshop, SOLITONS, NONLINEAR CONDUCTION AND NONLINEAR PLASMAS, Madrid, October.
62. 2005 Workshop, FILM FLOWS, Madrid, November.
63. 2006 Workshop, ANHARMONIC TRANSPORT PROCESSES, Madrid, January, April & October.
64. 2006 Workshop, FILM FLOWS, Madrid, May.
65. 2007 Workshop, PROCESOS INTERFACIALES NO LINEALES, Madrid, February.
66. 2007 Workshop, ANHARMONIC DYNAMICS AND SUPERSONIC ELECTRIC TRANSPORT, Madrid, February, April & August.
67. 2007 Workshop, NONLINEAR PROBLEMS IN ELECTRON TRANSPORT, Madrid, November/December.
68. 2008 Workshop, NONLINEAR PROBLEMS IN ELECTRON TRANSPORT, Madrid, April & July.
69. 2008 EUcognition & SPARK Summer School/Curso de Verano, NONLINEAR DYNAMICS AND ROBOTS: FROM NEURONS TO COGNITION, El Escorial (Madrid), August.
70. 2008 Workshop, NEURODYNAMICS AND ROBOTS, Madrid, September & December.
71. 2009 Workshop, BIPOLARONS, SOLELECTRONS, ELECTRON PAIRING AND SUPERCONDUCTIVITY, Madrid, February.
72. 2009 Workshop, ANHARMONIC LATTICES IN ONE-DIMENSION AND TWO-DIMENSIONS, Madrid, April.
73. 2009 Workshop and International Conference, NONLINEAR DYNAMICS, Pescara (Italy), July.
74. 2009 EXPLORA Workshop, MARCUS THEORY OF ET AND TUNNELING PROCESSES, Madrid, November.
75. 2010 EXPLORA Workshop, SUPERCONDUCTION AT ROOM TEMPERATURE? Madrid, February.
76. 2010 EXPLORA Workshop, PERCOLATION IN TWO-DIMENSIONAL LATTICES, Madrid, April.
77. 2010 MULTIFLOW SUMMER SCHOOL (MARIE CURIE TRAINING SCHOOL), El Escorial, June.
78. 2010 EXPLORA Workshop, BCS-BCE CROSS-OVER PHENOMENA, Madrid, August.

79. 2010 EXPLORA Workshop, NONLINEAR (1D-2D) LATTICE SOLITONS, Madrid, November.
80. 2011 EXPLORA Workshop, SOLITONS IN HEATED LATTICES, Madrid, January.
81. 2011 EXPLORA Workshop, MULTISOLITONS IN ANHARMONIC LATTICES, Madrid, April.
82. 2011 EXPLORA Workshop (7-10) and WEEK OF SCIENCE (12-16), Madrid, September.
83. 2011 Workshop, LATTICE DYNAMICS AND SOLITON-ASSISTED ELECTRIC CONDUCTION, December.
84. 2012 Workshop, OHMIC AND NON-OHMIC POLYMER CONDUCTION, Madrid, January-February.
85. 2012 Workshop, SOLITONS IN 2D LATTICES, Madrid, April.
86. 2012 Workshop, ELECTRON TRANSPORT, Madrid, June.
87. 2012 Workshop SOLITONS IN 2D LATTICES, Madrid, September.
88. 2012 Workshop ET IN SYNTHETIC DNA, PDA AND RELATED POLYMERS, December.
89. 2013 Workshop ELECTRON SURFING AND ZERO RESISTANCE POLYMER CONDUCTORS, Madrid, February.
90. 2013 Workshop SOLECTRON THEORY AND POSSIBLE APPLICATIONS, Berlin, April.
91. 2013 Workshop ANHARMONIC SYSTEMS (DISCRETE AND CONTINUUM APPROACHES) AND SUPERSONIC LOSS-FREE TRANSPORT, Madrid, September.
92. 2013 Workshop MOLECULES, ELECTRONS AND APPLICATIONS OF THE SOLECTRON THEORY TO PDA POLYMERS, Madrid, December.
93. 2014 Workshop SUBSONIC AND SUPERSONIC ET IN DNA, Madrid, January.
94. 2014 Workshop BOUNDS STATES AND ELECTRON TRANSFER, Madrid, April.
95. 2014 Workshop COMPUTACION DE TRANSPORTE A NIVEL NANOMETRICO, Madrid, August.
96. 2014 Workshop LATTICE DISCRETNESS AND LOCALIZED EXCITATION, Madrid, November.
97. 2015 Workshop LONG RANGE FAST ELECTRON TRANSFER IN DNA AND OTHER BIOMATERIALS, Madrid, February.
98. 2015 Workshop SFET-SOLECTRON FIELD EFFECT TRANSISTOR, Madrid, April
99. 2016 International Symposium THE SOLITON CONCEPT AND ITS INTER-, TRANS- AND PLURI-DISCIPLINARY UBIQUITY: TRUTH AND CONSEQUENCES FROM THE MACRO- TO THE NANO-WORLD, Fundación Ramón Areces, Madrid, November

Ph.D. THESES/TESIS DOCTORALES (DIRECTOR/SUPERVISOR):

UNIV. COMPLUTENSE (5), UNIV. AUTONOMA MADRID (2), U.N.E.D. (16), HUMBOLDT UNIV. BERLIN (1).

MASTER THESES/TESINAS: UNIV. AUTONOMA MADRID (14).

VARIA (PLACES WHERE -generally, by invitation- I HAVE DELIVERED LECTURES, SCIENTIFIC COLLOQUIA & SEMINARS IN SPAIN AND OTHER COUNTRIES/INSTITUCIONES, ESCUELAS, LUGARES, ETC. DONDE HE IMPARTIDO SEMINARIOS O CONFERENCIAS, generalmente por invitacion)

- 0. Schools/Conferences Plenary Speaker/Lecturer:** Les Houches (France), E. FERMI-Varennna (Italy), SYNERGETICS-Elmau (Germany), NATO-ASI-Geilo (Norway), GULBENKIAN-Porto & Arrabida (Portugal), CISM-Udine (Italy), IUPAP (Statphys)-Xiamen (PR China), EPS (Liquids)-various places, Dynamics Days-Como (Italy), EUROMECH-Cambridge (UK), EUROOTHERM-Delft (Holland), CERET-Compiegne (France), GORDON Conference-Plymouth (USA), UIMP-Santander (Spain), UIA-La Rabida (Spain), UCM-El Escorial (Spain), etc.
- 1.** Participant all over the world at several hundred scientific meetings, generally by invitation as a speaker or as chairperson/He asistido a varios centenares de reuniones cientificas internacionales en las que (salvo contados casos) he sido conferenciante invitado o presidente sesion.
- 2.** Miembro del Comité Científico Internacional (Programme Committee, Advisory Board, etc) de numerosas Reuniones Internacionales.
- 3.** Invited Research Seminars, Colloquia & other Lectures/Sobre mi trabajo he dado conferencias y seminarios científicos en Universidades y Centros de Investigación en:
 - i. **Espana-Spain** (numerosas veces en centros de investigación y universidades).
 - ii. **Europe (Alemania:** Free Univ. & T. U. Berlin-Oeste y Humboldt U.-Berlin-Este, Rostock, Bremen, Karlsruhe, Kiel, Hamburg, Bayreuth, Köln, Dusseldorf, Stuttgart, Munich, Schloss Elmau, Tübingen, Göttingen, Wiesbaden; **Austria:** Vienna, Linz; **Belgica:** ULB, Académie des Sciences, von Karman Inst.-Bruselas, Mons, Liege, Louvain; **Bulgaria:** Sofia; **Checo-eslovaquia:** Praga; **Dinamarca:** Copenhagen, Lyngby, Odense; **Francia:** CEN-CEA-Saclay, Paris-Orsay, Paris VI, Paris VII, EPC-Paris, ENS-Paris, Poitiers, Compiegne, Grenoble, Rouen, Montpellier, Les Houches, Lyon, Menton, Marseille, Isle Embiez, Toulouse, Bordeaux, Estrasburgo, Nice, Poitiers, Peyresq; **Grecia:** U. P. Atenas, U. Patras, Olympia, Heraclion; **Holanda:** Delft, Inst. Lorentz-Leiden, Amsterdam, ESTEC-ESA-Norwick, Wageningen; **Hungria:** Budapest, Balaton; **Italia:** Roma, Milano, Florencia, Trieste, Pisa, Varenna, Como, Messina, Napoles, Udine, Sorrento, Catania; **Polonia:** Varsovia; **Portugal:** Lisboa, Porto, Covilha, Arrabida Monastery; **Suiza:** Ginebra, ETH-Lausanne, Zurich; **Noruega:** NTH-Trondheim, Kristiansand, Grimstad, Geilo, Oslo; **Suecia:** RIT-Estocolmo, Uppsala; **U.K.:** Imperial College-Londres, Chelsea College-Londres, University College-Londres, Oxford, Cambridge, Aberdeen, Bristol, Edimburgo, Royal Radar E.-Malvern, Lancaster, Sheffield, Warwick-Coventry, Canterbury).
 - iii. **EE.UU.-USA** (Ann Arbor-Michigan, Austin-Tx, Houston-Tx, Lubbock-Tx, San Angelo-Tx, MIT-Cambridge, Harvard-Cambridge, Boston, Bozeman-

- Montana, CNLS-Los Alamos, UF-Gainesville, U. Miami-Coral Gables, FAU-Boca Raton, Stanford, UC-San Diego, UC-Santa Barbara, UC-Berkeley, UC-Santa Cruz, UCLA, CALTECH-Pasadena, Salt Lake City-Utah, Iowa Univ.-Iowa City, Hydraulic Inst.-Iowa City, Boulder-Co., Laramie-Wyoming, Tucson-Arizona, Haverford College-Philadelphia, Bryn Mawr College-Philadelphia, Temple Univ.-Philadelphia, UP-Philadelphia, Rochester, Boston, Yeshiva Univ.-NY, Courant Inst.-NY, Columbia-NY, City College-NY, Rockefeller-NY, IBM-Yorktown Heights, Bell Labs-Murray Hill, Yale-New Haven, Case Western-Cleveland, Univ. Chicago, IIT- Chicago, Northwestern-Evanston, NBS-Washington DC, NRL-Washington DC, National Academy of Sciences-Washington DC, NPS-Monterey, UNM-Albuquerque, Sandia Lab.-Albuquerque, Rochester, Miami-Coral Gables, Rutgers U., NRL-Orlando, NORDA-Louisiana, College Park-Maryland, Washington U.-St. Louis-Missouri, etc).
- iv. **Mexico** (UNAM-Mexico DF, Jalapa); **Colombia** (CIF-Bogota); **Argentina** (Buenos Aires, La Plata); **Chile** (Santiago, Valparaiso).
 - v. **Canada** (Montreal, Ottawa).
 - vi. **Far East (Republica Popular China:** Academia Sinica-Inst. Theoret. -Phys. Beijing, Inst. Atmospheric Phys.-Beijing & Normal Univ.-Beijing, North W. U.-Xian y HUST-Wuhan, Xiamen, Normal Univ.-Shanghai, Fudan Univ.-Shanghai; **Corea:** Seoul, KAIST-Taejon; **Japan:** Tokyo Univ., Science Univ. Tokyo, Kyoto Univ., Chubu Univ., Kyushu Univ.-Fukuoka; **Hong-Kong:** Science & Technology Univ., Polytechnic Univ.).
 - vii. **Israel** (Tel Aviv, Technion-Haifa).
 - viii. former **USSR-Russia** (Inst. Landau-Moscow, Inst. Lebedev-Moscow, Inst. Problems Mechanics-Moscow, Lomonosov Univ.-Moscow, Physico Techn. Inst.-Moscow, Inst. Steklov-Leningrado/St. Petersburg, Kiev, Inst. Biophysics, Pushchino).
 - ix. **Africa (Marruecos:** Rabat, Casablanca, Marrakech).
4. Lay audience: "La Barraca de la Ciencia: A Decade of Science for the People in Spain" and beyond. Almost a thousand public lectures in Spain (touring the country with a car with trolley bringing lab equipment) and a few places abroad/Como educador/divulgador de la Ciencia he dado casi un millar de conferencias tanto en España como en algunos centros del extranjero, muchas de ellas ilustradas con experimentos y multimedia ("La Barraca de la Ciencia").
 5. Listado (con biografia) en los libros de referencia: WHO IS WHO IN THE WORLD (Marquis, USA), WHO IS WHO IN SCIENCE (Longmans, UK), etc.

PUBLICATIONS/PUBLICACIONES

FIRST LISTING: SCIENTIFIC PUBLICATIONS IN PERIODICALS/PUBLICACIONES EN REVISTAS CIENTIFICAS

(NB: Only the name **VELARDE** has been used with initials M. G. or simply M.)

SECOND LISTING (*numbering in italics*): BOOK CHAPTERS, LECTURE NOTES, CONFERENCE PROCEEDINGS, etc/CAPITULOS DE LIBROS, NOTAS

DE CURSOS O ESCUELAS INTERNACIONALES, CONTRIBUCIONES A ACTAS DE REUNIONES CIENTIFICAS O CONGRESOS CIENTIFICOS, etc.

(NB: Only the name VELARDE has been used with initials M. G. or simply M.)

THIRD LISTING: PUBLICATIONS FOR LAY AUDIENCE/

DIVULGACION CIENTIFICA (papers, book reviews, etc/ articulos, recensiones de libros y monografias)

(NB.: Generally published under the full name Manuel Garcia Velarde)

For further information, (1993 onwards) see:

<http://www.ucm.es/info/fluidos>

1968

1. 1968 "On the domain of validity of Gibbs' entropy law", *Phys. Lett. A* **26**, 584-585 (with J. Wallenborn).

1. 1968-69 17 articulos de Fisica, Enciclopedia (20 tomos), Proliber, S.A., Madrid.

1969

2. 1969 "On a descomposition out of equilibrium of the Gibbs' entropy of a classical non-uniform gas", *An. Fisica (Spain)* **LXV**, 117-126.
3. 1969 "Una extension natural, para estados fuera de equilibrio, de la nocion usual de entropia de informacion", *An. Fisica (Spain)* **LXV**, 131-134.
4. 1969 "Sobre la imposibilidad de un desarrollo analitico en la densidad, para los coeficientes de transporte de un gas clasico o cuantico", *An. Fisica (Spain)* **LXV**, 359-364.
5. 1969 "On the validity of Gibbs' entropy law in strongly coupled systems", *Physica* **43**, 263-276 (with G. Nocolis & J. Wallenborn).

2. 1969 "J. E. Mayer. *Equilibrium Statistical Mechanics*", Pergamon Press, London, 1969, *Physica* (Belgian Phys. Soc. Bull.) VI, 5, 6-7 (Recension libro/Book review).

1970

6. 1970 "Sobre la renormalizacion de una divergencia en el calculo de los coeficientes de transporte (lineal) de un gas (cuantico) denso", *An. Fisica (Spain)* **LXVI**, 345-349.
7. 1970 "Sur le calcul des coefficients de transport dans un gaz simple, classique ou quantique. I. Quelques notes historiques et la question formelle du developpement en serie de la densite", *Revista Real Academia Ciencias (Madrid)* **LXIV**, 917-964.

1971

8. 1971 "Sur le calcul des coefficients de transport dans un gaz simple, classique ou quantique. II. Le probleme des divergences dans le calcul des deux premieres corrections du modele de Boltzmann dans un gaz de Lorentz", *Revista Real Academia Ciencias (Madrid)* **LXV**, 165-205.

9. 1971 "Non-analytic density expansion of transport coefficients in the quantum Lorentz gas and weak-coupling approximation", *Physica* **51**, 541-560 (with P. Resibois).
10. 1971 "Thermal diffusion and convective stability: A critical survey of Soret coefficient measurements", *Chem. Phys. Lett.* **12**, 312-315 (with R. S. Schechter).

1972

11. 1972 "Thermal diffusion and convective stability: An analysis of the convected fluxes", *Phys. Fluids* **15**, 1707-1714 (with R. S. Schechter).

-
1. 1972 "Symmetry breaking instabilities", in Irreversibility in the Many-Body Problem, J. Biel & J. Rae (editors), Plenum Press, New York, pp. 423-456.
 2. 1972 "Discussion remarks", in Statistical Mechanics, New Concepts, New Problems, New Applications, VIth IUPAP Conference, S. A. Rice, K. F. Freed & J. C. Light (editors), Univ. Chicago Press, Chicago, pp. 200, 228.

1973

12. 1973 "Comments on cluster expansion and autocorrelation functions: Self-diffusion coefficient", *J. Chem. Phys.* **59**, 2166-2167 (with P. Resibois).
13. 1973 "Sobre el movimiento convectivo del manto terrestre y la deriva continental. I. Bases físicas de partida", *Revista Geofísica (Spain)* **XXXII**, 289-312 (with J. Salan).

-
3. 1973 "Evolucion e irreversibilidad", *Triunfo* **537**, 20-25 (dibujo multicolor de la portada por SALTES dedicado al artículo).
 4. 1973 "J. J. Budnik & M. P. Kawatra (editors), *Dynamical aspects of Critical Phenomena*", Gordon & Breach, N.Y., 1973, *An. Fisica* **69**, 219 (Recension libro/Book review).

1974

14. 1974 "Estabilidad hidrodinamica y campo hidrostático adiabático", *Revista Geofísica (Spain)* **XXXIII**, 79-101 (with R. Perez-Cordon).
15. 1974 "Fluctuating Hydrodynamics and Brownian motion. II. Note on the slip boundary condition", *J. Stat. Phys.* **10**, 103-105 (with E. H. Hauge).
16. 1974 "The two-component Benard problem", *Adv. Chem. Phys.* **26**, 265-301 (with R. S. Schechter & J. K. Platten) [Invited].

-
3. 1974 "On cluster expansions and autocorrelation functions: further remarks on the divergence of the density expansion of transport coefficients", in Molecular Motions in Liquids, A. J. Lascombe (editor), Reidel, Dordrecht, Holland, pp. 65-70.
 4. 1974 "On the Enskog hard-sphere kinetic equation and the transport phenomena of dense simple gases", in Transport Phenomena, G. Kirczenow & J. Marro (editors), Springer-Verlag, N.Y., pp. 288-336 [Invited].

-
5. 1974 "La deriva de los continentes", *Triunfo* **588**, 16-19 (with J. Salan).
 6. 1974 "Los cristales líquidos", *Arbor* **LXXXVIII**, nº 343-344, 41-52 [361-372].
 7. 1974 "Vision artificial para ciegos", *Triunfo* **606**, 45.
 8. 1974 "OVNIS-estadística de testimonios", *Triunfo* **606**, 45.
 9. 1974 "El cloruro de vinilo y su toxicidad cancerígena", *Ciudadano* **9**, 68.

10. 1974 "La odisea de unas tortugas y la deriva continental", *Triunfo* **618**, 29 (with J. Salan).
11. 1974 "De donde provienen los diamantes de la Guayana?", *Triunfo* **623**, 12 (with J. Salan).
12. 1974 "Subnormales por negligencia", *Ciudadano*, Especial-Dossier del NINO (Junio), pp. 114-116 (with A. Machado).
13. 1974 "Comics infantiles no aptos para comer", *Ciudadano* **11**, 8-9.
14. 1974 "Nota sobre los premios Nobel de Fisica 1974", *Triunfo* **630**, 18-19.

1975

17. 1975 "Formacion de estructuras disipativas en sistemas termodinamicos muy alejados del equilibrio: un ejemplo del sorprendente efecto de los fenomenos de transporte cruzado", *Revista Real Academia Ciencias (Madrid)* **LXIX**, 169-190.
18. 1975 "On the (nonlinear) foundations of Boussinesq approximation applicable to a thin layer of fluid", *J. Phys. (Paris)* **36**, 591-601 (with R. Perez-Cordon).
19. 1975 "On the nature of the neutral stability curve belonging to various thermohydrodynamic problems", *An. Fisica (Spain)* **71**, 325-328 (with J. L. Ibanez).

15. 1975 "De la energia solar a la energia electrica, via la energia termica (I) Bases de partida", *Electronica & Fisica Aplicada* **18**, 13-16.
16. 1975 "De la energia solar a la energia electrica, via la energia termica (II) La piscina solar", *Electronica & Fisica Aplicada* **18**, 67-72 (with J. V. Gomez-Abad).
17. 1975 "Un centenario remarcable: la convencion del metro en 1875", *Arbor* **XCII**, nº 360, 49-53 [337-341] (with J. J. Gonzalez).

1976

20. 1976 "On the (nonlinear) foundations of Boussinesq approximation applicable to a thin layer of fluid. II. Viscous dissipation and large cell gap effects", *J. Phys. (Paris)* **37**, 176-182 (with R. Perez-Cordon).
21. 1976 "The cumulant expansion in renormalization-group transformations: The convergence question and the dependence upon cell size", *J. Phys. (London)* **A 9**, 1713-1717 (with P. C. Hemmer).
22. 1976 "Limit Cycle and dissipative structures in a simple bimolecular non-equilibrium reactional scheme with enzyme", *Phys. Lett.* **A 58**, 364-366 (with J. L. Ibanez & V. Fairen).
23. 1976 "Stability diagram and nonlinear structures in a simple reaction scheme involving inhibition forward", *Phys. Lett.* **A 59**, 335-337 (with J. L. Ibanez & V. Fairen).

5. 1976 "Linear and nonlinear aspects of three thermal instabilities", in Mathematical and Numerical Methods in Fluid Dynamics, I. A. E. A., Vienna, pp. 489-514 [Invited].

18. 1976 "Sadi Carnot y el desarrollo de la maquina de vapor", *Arbor* **XCIII**, nº 361, 57-66 (with J. L. Ibanez).
19. 1976 "La vida, un continuo ajuste entre azar y necesidad", *Diario Informaciones (Madrid)* Suplemento de la Ciencia y la Tecnica, 9 Junio.
20. 1976 "Se puede hablar de vitaiones?", *Diario Informaciones (Madrid)*, Suplemento de la Ciencia y la Tecnica, 25 Agosto.
21. 1976 "Algunas cuestiones relativas al almacenamiento termico de la energia mediante sales fundidas", *Quimica e Industria* **22**, 778-783 (with J. Pantaloni).

22. 1976 "La enseñanza de la Física a estudiantes de otras disciplinas", *Arbor* **XCIV**, nº 372, 39-47 [359-367] (with J. M. Rojo).
23. 1976 "Problemática de la didáctica de la Física para estudiantes de otras disciplinas", en *Actas II Seminario sobre Didáctica de la Física en la Universidad*, INCIE, Madrid, pp. 91-99.
24. 1976 *Presentación de la traducción castellana de E. Schrodinger "Que es la vida?"*, Editorial Avance, Barcelona, pp. 9-13.
25. 1976 "J. L. Fink, *Generalized Thermodynamics. Its Philosophy and Rationale*", Jerusalem Academic Press, 1974, *J. Phys. (Paris)* **37**, 175 (Recension libro/Book review) (with A. Sanfeld).

1977

24. 1977 "Convective instability: A Physicist's Approach", *Revs. Modern Phys.* **49**, 581-624 (with Ch. Normand & Y. Pomeau) [Invited].
25. 1977 "Steady states and stability analysis of a bimolecular non-equilibrium reaction scheme with general Hinshelwood-Langmuir saturation-inhibition law", *J. Phys. Lett. (Paris)* **38**, 405-407 (with J. L. Ibanez).
26. 1977 "Hydrochemical stability of an interface between two immiscible liquids: The role of Langmuir-Hinshelwood saturation law", *J. Phys. Lett. (Paris)* **38**, 1479-1483 (with J. L. Ibanez).
27. 1977 "Sur la convection cellulaire dans les sels fondus pres de leur point de solidification", *Comptes Rendus, Acad. Sci. (Paris)* **B 285**, 275-278 (with J. Pantaloni, R. Bailleux & E. Guyon).
28. 1977 "The role of convection in the transient hot wire method", *Rev. Phys. Appl. (Paris)* **12**, 1849-1854 (with J. Pantaloni, E. Guyon, R. Bailleux & G. Finiels).

-
6. 1977 "Hydrodynamic instabilities (in Isotropic Fluids)", in *Fluid Dynamics*, (Les Houches 1973) *R. Balian & J. L. Peube (editors)*, Gordon & Breach, New York, pp. 471-527 [Invited].
 7. 1977 "Stability concepts in Ocean Fluid Dynamics: Introductory notes", in *Etude et gestion du systeme marin, Procs. IV Colloquium Environmental Sciences E4-77*, Louvain, *I. Elskens, A. Sanfeld & J. Vigneron (editors)*, Presses Universitaires, Brussels, Vol. I, pp. 19-26 [Invited].

-
26. 1977 *Presentación de "Fronteras de la Ciencia"*, (*M. G. Velarde, editor*) vols. 1 y 2, U.N.E.D., Madrid.
 27. 1977 "Los cristales líquidos, una curiosa fase de la materia", *Diario Informaciones (Madrid)*, Suplemento de la Ciencia y la Técnica, 26 Enero (entrevista de J. L. Aguado).
 28. 1977 *Cuestiones de termodinámica y de física estadística*, Memoria nº 2, Real Academia de Ciencias (Madrid), 72 pp. (with C. Fernandez Pineda).

1978

29. 1978 "Multiple steady states in a simple reaction-diffusion model with Michaelis-Menten (first order Hinshelwood-Langmuir) saturation law: The limit of large separation in the two diffusion constants", *J. Math. Phys.* **19**, 151-156 (with J. L. Ibanez).
30. 1978 "Soret-driven convective instability with rotation", *Phys. Lett. A* **65**, 377-379 (with J. C. Antoranz).
31. 1978 "Thermal diffusion and the Marangoni-Benard instability of a two-component fluid layer heated from below", *Phys. Lett. A* **66**, 489-491 (with J. L. Castillo).

32. 1978 "The cumulant expansion in renormalization group transformations of Ising Models: Cells with nine spins and anisotropic cell interactions", *J. Phys. (Paris)* **39**, 732-736 (with E. Moline).
 33. 1978 "Instabilite de Benard-Marangoni dans les nematiques", *J. Phys. Lett. (Paris)* **39**, 205-208 (with E. Guyon).
 34. 1978 "Nonlinear reaction-diffusion on a sphere: a simple autocatalytic model with Michaelis-Menten (first order Hinshelwood-Langmuir) saturation law", *J. Non-Equilib. Thermodyn.* **3**, 63-82 (with J. L. Ibanez).
 35. 1978 "Stability analysis of dissipative structures in a nonlinear diffusion-reaction problem", *Phys. Rev.* **A18**, 750-755 (with J. L. Ibanez).
 36. 1978 "A case of multiple steady states in reaction-diffusion systems", *J. Phys. (Paris)* **39**, **C 5**, 17-18.
 37. 1978 "Multiple steady states for the Degn-Harrison reaction scheme of a Bacterial Culture", *Zeit. Phys.* **B 31**, 111-116 (with P. C. Hemmer).
 38. 1978 "Further evidence of a phase transition induced by external noise", *Phys. Lett.* **A 69**, 304-306 (with F. J. de la Rubia).
-
8. 1978 "The transient hot wire method in liquids revisited: convective phenomena", in Physicochemical Hydrodynamics, *D. B. Spalding (editor)*, Advance Pub., Guernsey, U.K., Vol I, pp. 391-397 (with J. Pantaloni, E. Guyon, R. Bailleux & G. Finiels).
 9. 1978 "Transition between steady states of simple models of relevance to interfacial stability: coupling of chemical to hydrodynamic instability", in Physicochemical Hydrodynamics, *D. B. Spalding (editor)*, Advance Pub., Guernsey, U.K., Vol. I, pp. 483-491 (with J. L. Ibanez, T. Sørensen, A. Sanfeld & M. Hennenberg).
 10. 1978 "Interfacial phenomena in Benard convection of molten salts", in Physicochemical Hydrodynamics, *D. B. Spalding (editor)*, Advance Pub., Guernsey, U.K., Vol. I, pp. 493-498 (with J. Pantaloni, R. Bailleux & E. Guyon).
 11. 1978 "Rayleigh-Benard convection of fluid layers: Some new theoretical results", in Les Instabilites en convection naturelle et forcee, *J. K. Platten & J. C. Legros (editors)*, Springer-Verlag, Berlin, pp. 89-101.
 12. 1978 "Periodic solutions and multiple steady states in reaction-diffusion systems", in Proceedings I.U.P.A.P. Statistical Mechanics meeting, (Haifa, Israel), Vol. 2, pp. 833-836 (with J. L. Ibanez).
 13. 1978 "Ferromagnetismo en un modelo de Ising triangular: Aplicacion del metodo de cumulantes en la teoria de Wilson (grupo de renormalizacion)", in Al Profesor Salvador Velayos Hermida, UCM, Madrid, pp. 100-105 (with E. Moline).
-
29. 1978 "Estructuras disipativas y evolucion", *Boletin* (Fundacion "Juan March"), Marzo, nº **69**, 3-18.
 30. 1978 "A. I. van de Vooren y P. J. Zandbergen (editors). *Procs. Fifth International Conference on Numerical Methods in Fluid Dynamics*, Springer-Verlag, N.Y. 1977", *J. Phys. (Paris)* **39**, 573 (Recension libro/Book review).
 31. 1978 "I. Oppenheim, K. E. Shuler y G. H. Weiss (editors), *Stochastic Processes in Chemical Physics: The Master equation*, MIT Press, 1978", *La Recherche*, nº **92**, 814 (Recension libro/Book review) (with P. Berge).

32. 1978 "J. Shnakenberg, *Thermodynamics network analysis of Biological Systems*, Springer-Verlag, N.Y. 1977", *J. Phys. (Paris)* **39**, 573 (Recension libro/Book review).

1979

39. 1979 "Dissipative structures in a nonlinear reaction-diffusion model with inhibition forward: global nonuniform steady patterns, spatiotemporal structures and wave-like phenomena", *Progress Theoret. Phys.* **61**, 801-814 (with V. Fairen).
40. 1979 "Stochastic description of a reaction scheme with autocatalysis and saturation law", *Chem. Phys. Lett.* **62**, 405-407 (with F. J. de la Rubia & V. Fairen).
41. 1979 "Phase transition picture of the Soret-driven convective instability in a two-component liquid layer heated from below", *Phys. Lett. A* **72**, 123-127 (with J. C. Antoranz).
42. 1979 "Thermal diffusion and convective stability: The role of uniform rotation of the container", *Phys. Fluids* **22**, 1038-1043 (with J. C. Antoranz).
43. 1979 "Rayleigh-Benard-Marangoni convective instability: New experimental results", *J. Non-equilib. Thermodyn.* **4**, 201-218 (with J. Pantaloni, R. Bailleux & J. Salan).
44. 1979 "Thermoconvective instabilities of nematic liquid layers: New theoretical predictions", *J. Phys. (Paris)* **40**, 725-731 (with I. Zuniga).
45. 1979 "Time periodic oscillations in a model for the respiratory process of a bacterial culture", *J. Math. Biology* **8**, 147-157 (with V. Fairen).
46. 1979 "Dissipative structures in a nonlinear reaction-diffusion model with forward inhibition. Stability of secondary multiple steady states", *Rep. Math. Phys.* **16**, 421-432 (with V. Fairen).
47. 1979 "The role of Soret and Dufour effects on the stability of a binary gas layer heated from below or above", *Geophys. Astrophys. Fluid Dyn.* **13**, 83-94 (with P. L. Garcia Ybarra).
48. 1979 "Singular perturbations approach to the limit cycle and global patterns in a nonlinear diffusion-reaction problem with autocatalysis and saturation law", *J. Math. Phys.* **20**, 2692-2703 (with L. L. Bonilla).

-
14. 1979 "Theory of hydrodynamic instabilities", in Dynamical Critical Phenomena and Related Topics, C. P. Enz (editor), Springer-Verlag, N.Y., pp. 309-319 [Invited].
 15. 1979 "Diffusion, reaction and convection at an interface: a few aspects of the stability problem", in Dynamics and Instability of Fluid Interfaces, T. S. Sørensen (editor), Springer-Verlag, N.Y., pp. 260-275 (translated to Russian) [Invited].
 16. 1979 "Secondary effects in Soret-driven instability", in Synergetics (Far from equilibrium), A. Pacault & C. Vidal (editors), Springer-Verlag, N.Y., pp. 80-84 [Invited].
-

33. 1979 "Se puede hablar de vitaciones?", *Arbor* **CII**, nº 398, 85-91 [233-239].
34. 1979 "Mesofases de la materia: Los cristales liquidos", *El Basilisco* **7**, 46-52 (with J. Salan).
35. 1979 "Estructuras disipativas. Algunas nociones basicas. 1", *El Basilisco* **10**, 8-13 (with V. Fairen).
36. 1979 "La condensacion de Bose-Einstein", *Centenario de Einstein*, Monografias Real Academia Ciencias (Madrid), pp. 47-58.

1980

49. 1980 "Mass-diffusion and boundary effects in Soret-driven convective instability", *Phys. Fluids* **23**, 402-403 (with A. Cordoba).
50. 1980 "Microgravity and the thermoconvective stability of a binary liquid layer open to the ambient air", *J. Non-Equilib. Thermodyn.* **5**, 111-124 (with J. L. Castillo).
51. 1980 "Localized nonuniform patterns in a reaction-diffusion model with auto-catalysis and the Langmuir-Hinshelwood saturation law", *J. Math. Phys.* **21**, 2586-2589 (with L. L. Bonilla).
52. 1980 "Laser with saturable absorber and two-component Benard convection: Limit cycle behaviour", *Phys. Lett. A* **80**, 220-222 (with J. C. Antoranz).

17. 1980 "Inestabilidad hidrodinamica y teoria de Landau de las transiciones de fase fuera de equilibrio", in Actas II Congreso de Ecuaciones Diferenciales y Aplicaciones, Pub. Mat. UAB, Barcelona, n. 19, pp. 5-17 (with J. C. Antoranz).
18. 1980 Discussion remarks, in Order and Fluctuations in Equilibrium and Nonequilibrium Statistical Mechanics, XVII Int. Solvay Conf. on Physics, G. Nicolis, G. Dewel & J. W. Turner (editors), Wiley, N.Y., pp. 190-191, 192-196, 201-203, 206-207.
19. 1980 "Dos ejemplos de sistemas de reaccion-difusion: (i) Estructuras localizadas, y (ii) Modelo de Hutchinson (de retardo temporal) con difusion", *Pub. Mat. UAB* n. **19**, 131-146 (with L. L. Bonilla).

37. 1980 "Convection", *Scientific American* **243** (1), 92-108 (with Ch. Normand) (translated to Spanish, French, Italian, German, Chinese, etc.) [Invited].
38. 1980 "La deriva de los continentes", *Ciencia y Pensamiento* **3**, 70-73.

1981

53. 1981 "Phenomenological phase transition approach to the two-component Rayleigh-Benard problem: Tricritical behavior", *J. Stat. Phys.* **24**, 235-241 (with J. C. Antoranz).
54. 1981 "Natural versus forced convection in two-component Benard problem: New theoretical results", *J. Non-Equilib. Thermodyn.* **6**, 159-164 (with J. A. Artiz-Cohen).
55. 1981 "Phase diagrams of a laser with absorber", *Optics Commun.* **38**, 61-63 (with J. C. Antoranz).
56. 1981 "Strange attractor (optical turbulence) in a model problem for the laser with saturable absorber and the two-component Benard convection", *Progress Theoret. Phys.* **66**, 717-720 (with J. C. Antoranz).
57. 1981 "Electrohydrodynamic stability in the presence of a thermal gradient", *Phys. Fluids* **24**, 1784-1786 (with A. Castellanos).
58. 1981 "Limit cycle in a bound exciton recombination model in non-equilibrium semiconductors", *J. Phys. Chem. Solids* **42**, 873-881 (with A. Pimpale, P. T. Landsberg & L. L. Bonilla).
59. 1981. "Oscillatory phenomena and Q-switching in a model for a laser with a saturable absorber", *Phys. Rev. Lett.* **47**, 1895-1898 (with J. C. Antoranz & J. Gea).

60. 1981 "Time-delay, diffusion and advection in a model for the time evolution of a spruce budworm population", *J. Interdisciplin. Cycle Res.* **12**, 267-272 (with L. L. Bonilla).

-
20. 1981 "Competition between time-delays and diffusion in a model ecological problem", in Symmetries and Broken Symmetries, N. Boccara (editor), IDSET, Paris, pp. 391-398 (with L. L. Bonilla) [Invited].
21. 1981 "Phase transition picture of hydrodynamic instabilities: Discontinuous transition, critical and multicritical phenomena in the two-component Benard problem", in Symmetries and Broken Symmetries, N. Boccara (editor), IDSET, Paris, pp. 425-430 (with J. C. Antoranz) [Invited].
22. 1981 "Steady states, limit cycles and the onset of turbulence. A few model calculations and exercises", in Nonlinear phenomena at phase transitions and instabilities, T. Riste (editor), Plenum Press, N.Y., pp. 205-247 [Invited].
23. 1981 "Limit cycles and strange attractor in the two component Lorenz model", in Actas IV C.E.D.Y.A. (Sevilla), Pub. Depto. Ecuaciones Funcionales, pp. 69-86 (with J. C. Antoranz).

-
39. 1981 "The state of Physics in Spain", *An. Fisica* **77**, 168-175 (with J. L. de Segovia, E. Bernabeu, A. Fernandez-Ranada, F. Flores & F. Verdaguer).
40. 1981 "Estructuras disipativas: potenciales y catastrofes-2", *El Basilisco* **12**, 14-18 (with J. Gea).
41. 1981 "E. Tirapegui (editor), *Field Theory. Quantization and Statistical Physics*, Reidel, Dordrecht, 1981", *Investigacion y Ciencia* n° **59**, 124-125 (Recension libro/Book review).
42. 1981 "G. Nicolis et al (editors), *Order and Fluctuations in Equilibrium and Non-Equilibrium Statistical Mechanics*, Wiley-Interscience, N.Y. 1981", *Investigacion y Ciencia* n° **62**, 172 (Recension libro/Book review).
43. 1981 "L. Arnold y R. Lefever (editors), *Stochastic nonlinear systems*, Springer-Verlag, Berlin, 1981", *Investigacion y Ciencia*, n° **63**, 144 (Recension libro/Book review).

1982

61. 1982 "Buoyancy-thermocapillary instability: The role of interfacial deformation in one- and two-component fluid layers heated from below or above", *J. Fluid Mech.* **125**, 463-474 (with J. L. Castillo).
62. 1982 "Two-component Benard convection in cylinders", *Int. J. Heat Mass Transfer* **25**, 1451-1456 (with E. Crespo).
63. 1982 "A model describing Soret diffusion and convective instability in a closed vertical column", *J. Non-Equilib. Thermodyn.* **7**, 253-258 (with P. L. Garcia Ybarra).
64. 1982 "Bistable limit cycles in a model for a laser with a saturable absorber", *Phys. Rev. Lett.* **49**, 35-38 (with J. C. Antoranz, L. L. Bonilla & J. Gea).
65. 1982 "The spruce budworm-forest ecosystem: a forty-year limit cycle", *J. Interdisciplin. Cycle Res.* **13**, 313-316 (with L. L. Bonilla & A. Fernandez-Cancio).
-
24. 1982 "Transport and reactive phenomena leading to interfacial instability", in Convective Transport and Instability Phenomena, J. Zierep & H. Oertel (editors), Braun-Verlag, Karlsruhe, pp. 235-264 (with J. L. Castillo) (translated to Russian) [Invited].

25. 1982 "Dissipative structures and oscillations in reaction-diffusion models with or without time-delay", in Stability of Thermodynamic Systems, J. Casas-Vazquez & G. Lebon (editors), Springer-Verlag, N.Y., pp. 248-278 [Invited].
26. 1982 "Benard convection and Laser with saturable absorber. Oscillations and Chaos", in Evolution of Order and Chaos, H. Haken (editor), Springer-Verlag, N.Y., pp. 132-145 [Invited].

44. 1982 "Nobel de Fisica 1982 (K. G. Wilson)", *Investigacion y Ciencia*, nº 75, 44-45.
45. 1982 "Estructuración y cooperatividad a partir del desorden", *Actas I Congreso de Teoría y Metodología de las Ciencias*, SAF, Oviedo, pp. 87-93.
46. 1982 "Conferencias científicas en colaboración con la Universidad", *El Ingenioso Hidalgo (Rev. I. B. "Cervantes")*, XII, nº 58-59, 199-200.
47. 1982 "Resumen histórico de actividades Dpto. de Física de Fluidos (hasta diciembre de 1979)", en *Miscelánea conmemorativa UAM*, Prensa Universitaria, Cantoblanco (Madrid), pp. 613-629.

1983

66. 1983 "Two-component Benard convection: Interfacial deformation, oscillatory instabilities and the onset of turbulence", *Adv. Space Res.* 3, 23-30 [Invited].

27. 1983 "Role of multiplicative non-white noise in a nonlinear surface catalytic reaction", in Nonlinear Stochastic Problems, R. S. Bucy & Jose M. F. Moura (editors), Reidel, Dordrecht, pp. 151-159 (with F. J. de la Rubia & J. Garcia Sanz).
28. 1983 "Buoyancy-Thermocapillary convection: The role of interfacial deformation", in Proceedings of the 4th European Symposium on Materials Sciences under Microgravity, ESA SP 191 (Paris), pp. 235-237 (with J. L. Castillo).
29. 1983 "The spruce budworm-forest and other ecosystems", in Rhythms in Biology and other fields of application, M. Cosnard, J. Demongeot & A. Le Breton (editors), Springer-Verlag, N.Y., pp. 94-100 (with L. L. Bonilla).

48. 1983 "Transiciones, fluctuaciones y evolución", en Conmemoración del Centenario de Darwin, Real Academia de Ciencias (Madrid), pp. 125-139.
49. 1983 "Transiciones, sinérgesis y evolución: de la física a la sociología" (Lección inaugural del curso), Publicaciones de la UNED, Madrid, 16 pp.
50. 1983 "B. Mandelbrot, *The fractal geometry of nature*, Freeman & Co., San Francisco, 1982", *Investigacion y Ciencia*, nº 86, 163 (Recensión libro/Book review).
51. 1983 "H. Haken (editor), *Evolution of order and chaos in Physics, Chemistry and Biology*, Springer-Verlag, Berlin, 1982", *Investigacion y Ciencia*, nº 87, 135 (Recensión libro/Book review).

1984

67. 1984 "Oscillatory and steady convection in dielectric liquid layers subjected to unipolar injection and temperature gradient", *Phys. Fluids* 27, 1607-1615 (with A. Castellanos & P. Atten).
68. 1984 "Electrothermal convection: Felici's hydraulic model and the Landau picture of non-equilibrium phase transitions", *J. Non-Equilib. Thermodyn.* 9, 235-244 (with A. Castellanos & P. Atten).
69. 1984 "Role of multiplicative non-white noise in a surface catalyzed reaction with oscillations", *Surface Sci.* 143, 1-10 (with F. J. de la Rubia & J. Garcia Sanz).

-
30. 1984 "Interfacial instability in binary mixtures: The role of the interface and its deformation", in Chemical Instabilities (with applications in Chemistry, Engineering, Geology, and Materials Science), G. Nicolis & F. Baras (editors), Reidel, Dordrecht, pp. 223-232 [Invited].
 31. 1984 "Phase transition analogies: Magnets, Lasers and Fluid Flows", in Non-Equilibrium Cooperative Phenomena in Physics and Related Fields, M. G. Velarde (editor), Plenum Press, N.Y., pp. 25-35 (with J. Gea-Banacloche & M. O. Scully).
 31. 1984 "Laser with intracavity absorber: Q-switching, multistable nonlinear oscillations and chaos", in Non-Equilibrium Cooperative Phenomena in Physics and Related Fields, M. G. Velarde (editor), Plenum Press, N.Y., pp. 103-115 (with J. C. Antoranz).
 33. 1984 "Thermohydrodynamic Instabilities: Buoyancy-thermocapillary convection", in Non-Equilibrium Cooperative Phenomena in Physics and Related Fields, M. G. Velarde (editor), Plenum Press, N.Y., pp. 179-196 (with J. L. Castillo).
 34. 1984 "Thermohydrodynamic Instability in nematic liquid crystals: A summary of arguments and conditions for some simple geometries", in Non-Equilibrium Cooperative Phenomena in Physics and Related Fields, M. G. Velarde (editor), Plenum Press, N.Y., pp. 197-205 (with I. Zuñiga).
 35. 1984 "Electrothermal instabilities in dielectric liquids", in Non-Equilibrium Cooperative Phenomena in Physics and Related Fields, M. G. Velarde (editor), Plenum Press, N.Y., pp. 223-233 (with A. Castellanos & P. Atten).
 36. 1984 "Non-white noise triggered oscillations in a nonlinear chemical process", in Non-Equilibrium Cooperative Phenomena in Physics and Related Fields, M. G. Velarde (editor), Plenum Press, N.Y., pp. 513-522 (with F. J. de la Rubia & J. J. Garcia Sanz).
 37. 1984 "Transport and Reactive Phenomena Leading to Interfacial Instability" in Hydrodynamic Interfacial Instability, A. Yu. Buevich (editor), MIR, Moscú, pp. 157 – 193 (with J. L. Castillo).
 38. 1984 "Interfacial instability in fluid layers under thermal constraints", in Self-Organization: Autowaves and Structures far from Equilibrium, V. I. Krinsky (editor), Springer-Verlag, N.Y., pp. 38-48 [Invited].

-
52. 1984 "M. Van Dyke (editor), *An album of fluid motion*, Parabolic Press, Stanford, 1982", *Investigacion y Ciencia*, nº 90, 127 (Recension libro/Book review).
 53. 1984 "C. W. Gardiner, *Handbook of Stochastic Methods*, Springer-Verlag, Berlin, 1983", *Investigacion y Ciencia*, nº 91, 113-114, (Recension libro/Book review) (with F. J. de la Rubia).

1985

70. 1985 "Corrigenda et Addenda to two-component Benard convection in cylinders", *Int. J. Heat Mass Transfer* **28**, 311-313 (with E. Crespo & P. L. Garcia-Ybarra).
71. 1985 "A solar pond for Central Spain", *Solar Energy* **34**, 179-180 (with J. A. Artiz-Cohen & M. Yuste).

72. 1985 "White versus Non-white stochastic environment of intrinsically stochastic systems: A Computational Approach to the Evolutionary Problem", *J. Non-Equilib. Thermodyn.* **10**, 219-232 (with F. J. de la Rubia).
73. 1985 "Thermoconvective instability of a rotating viscoelastic fluid layer heated from below", *J. Non-Equilib. Thermodyn.* **10**, 241-250 (with J. Jimenez).
74. 1985 "Marangoni Convection in liquid films with a deformable open surface", *J. Colloid Interface Sci.* **108**, 264-270 (with J. L. Castillo).

-
54. 1985 "Vamos a alguna parte ex-profeso? Determinismo, predicibilidad y evolucion a finales del Siglo Veinte", en *Conmemoracion del Centenario de N. Bohr*, *Arbor* **CXXII**, nº 478, 65-80.
 55. 1985 "J. D. Harvey y D. F. Walls (editors), *Laser Physics*, Springer-Verlag, Berlin, 1983", *Investigacion y Ciencia*, nº **101**, 102 (Recension libro/Book review).
 56. 1985 "W. Horsthemke y R. Lefever, *Noise-induced transitions*, Springer-Verlag, Berlin, 1984", *Investigacion y Ciencia*, nº **105**, 109-110 (Recension libro/Book review) (with F. J. de la Rubia).

1986

39. 1986 "Marangoni oscillatory instability of a fluid layer with an open deformable boundary" in *Materials under Extreme Conditions*, H. Ahlborn, H. Fredriksson & E. Lüscher (editors), Editions de Physique, Paris, pp. 67-71 (with P. L. Garcia-Ybarra).
40. 1986 "Marangoni-Benard Convection and Macrodynamics of Tear Film Flow", in *The Preocular Tear Film (in Health, Disease and Contact Lens Wear)*, F. J. Holly (editor), Dry Eye Institute, Lubbock, Texas, pp. 688-696 (with J. Murube, J. L. Castillo & M. Garcia).
41. 1986 "Intermittency and related phenomena in a simple model of a laser with saturable absorber", in *Instabilities and Dynamics of lasers and nonlinear optical systems*, R. W. Boyd, L. M. Narducci & M. G. Raymer (editors), Cambridge Univ. Press, Cambridge, pp. 287-292 (with J. C. Antoranz).

-
57. 1986 "La Fisica de Fluidos: vision impresionista de algunos fenomenos", *Politica Cientifica*, (nº extra) Junio-Septiembre (Madrid), 41-43.
 58. 1986 "H. Haken, *Synergetics & Advanced Synergetics*, Springer-Verlag, Berlin, 1983", *Investigacion y Ciencia*, nº **1XX**, xx (Recension libro/Book review).
 59. 1986 "W. Weidlich & G. Haag, *Concepts and models of a quantitative Sociology*, Springer-Verlag, Berlin, 1983", *Investigacion y Ciencia*, nº **121**, 114-115 (Recension libro/Book review).

1987

75. 1987 "Interfacial Oscillations in Benard-Marangoni Layers", *Physicochem. Hydrodyn.* **9**, 387-392 (with P. L. Garcia-Ybarra & J. L. Castillo).
 76. 1987 "A nonlinear evolution equation for Benard-Marangoni convection with deformable boundary", *Phys. Lett. A* **122**, 107-110 (with P. L. Garcia-Ybarra & J. L. Castillo).
 77. 1987 "Oscillatory Marangoni-Benard interfacial instability and capillary-gravity waves in single- and two-component liquid layers with or without Soret thermal diffusion", *Phys. Fluids* **30**, 1649-1655 (with P. L. Garcia-Ybarra).
 78. 1987 "Benard-Marangoni convection with a deformable interface and poorly conducting boundaries", *Phys. Fluids* **30**, 2655-2661 (with P. L. Garcia-Ybarra & J. L. Castillo).
-

42. 1987 "Oscillatory and other Benard-Marangoni instabilities in fluid layers under microgravity conditions", in Procs. 6th European Symposium on Material Sciences under Microgravity Conditions, W. R. Burke (editor), ESA-SP-256, Paris, pp. 45-48 (with P. L. Garcia-Ybarra).
43. 1987 "Fluid dynamics", in Fluid Sciences and Materials Science in Space. A European Perspective, H. U. Walter (editor), Springer-Verlag, N.Y., pp. 83-139 (with J. C. Legros & A. Sanfeld) (translated to Chinese) [Invited].
44. 1987 "Digital and analog approach to intermittencies and 1/f noise in a nonlinear Helmholtz oscillator", in Computational Systems, Natural and Artificial, H. Haken (editor), Springer-Verlag, N.Y., pp. 196-201 (with J. C. Antoranz, M. A. Rubio & M. de la Torre).
45. 1987 "Intermittencies and Chaos", in Teaching Nonlinear Phenomena, Vol II: Chaos in Education, G. Marx (editor), NCET, Veszprem, Hungary, pp. 230-245 [Invited].

-
60. 1987 "El atomismo y el nacimiento de la Mecanica Estadistica" en *Historia de la Fisica en el siglo XIX*, Real Academia Ciencias, Madrid, 41-58.

1988

79. 1988 "Comment on Some properties of an eight-mode Lorenz model for convection in binary fluids", *Phys. Rev. A* **37**, 1381-1382 (with J. C. Antoranz).
80. 1988 "The harmonic oscillator approach to sustained gravity-capillary (Laplace) waves at liquid interfaces", *Phys. Lett. A* **131**, 430-432 (with X.-L. Chu).
81. 1988 "Sustained transverse and longitudinal waves at the open surface of a liquid", *Physicochem. Hydrodyn.* **10**, 727-737 (with X.-L. Chu).
82. 1988 "Free surface convection in a bounded cylindrical geometry: Note on the role of surface adsorption and solute accumulation at the air-liquid interface", *Int. J. Heat Mass Transfer* **31**, 1979-1982 (with X.-L. Chu).
83. 1988 "Space inhomogeneity and detuning effects in a laser with a saturable absorber: a first-order approximation", *J. Optical Soc. Am. B* **5**, 1074-1076 (with P. Garcia-Fernandez).

-
46. 1988 "Thermohydrodynamic instabilities", in Synergetics and Dynamic Instabilities, G. Caglioti, H. Haken & L. Lugiato (editors), North Holland, Amsterdam, pp. 219-243 (with J. L. Castillo & P. L. Garcia-Ybarra) [Invited].
 47. 1988 "Detuning and space inhomogeneity in a laser cavity with absorber", in Synergetics, Order and Chaos, M. G. Velarde (editor), World Scientific, Singapore, pp. 127-139 (with P. Garcia-Fernandez).
 48. 1988 "An interfacial oscillator", in Synergetics, Order and Chaos, M. G. Velarde (editor), World Scientific, Singapore, pp. 143-147 (with X.-L. Chu).
 49. 1988 "Electrohydrodynamic interfacial oscillations", in Synergetics, Order and Chaos, M. G. Velarde (editor), World Scientific, Singapore, pp. 148-157 (with X.-L. Chu & A. Castellanos).
 50. 1988 "Benard-Rayleigh convection revisited", in Synergetics, Order and Chaos, M. G. Velarde (editor), World Scientific, Singapore, pp. 203-212 (with J. Jimenez-Fernandez).

51. 1988 "High-order Langmuir-Hinshelwood kinetics and limit cycle oscillations in non-equilibrium semiconductors", in Synergetics, Order and Chaos, M. G. Velarde (editor), World Scientific, Singapore, pp. 282-291 (with R. Cuerno).
52. 1988 "Sustained Gravity-Capillary (Laplace) waves at interfaces and Marangoni-Benard instability", in Physicochemical Hydrodynamics: Interfacial Phenomena, M. G. Velarde (editor), Plenum Press, N.Y., pp. 179-182 (with P. L. Garcia-Ybarra).
53. 1988 "The harmonic oscillator description of longitudinal (Marangoni-Lucassen) waves at liquid interfaces", in Physicochemical Hydrodynamics: Interfacial Phenomena, M. G. Velarde (editor), Plenum Press, N.Y., pp. 183-187 (with X.-L. Chu).
54. 1988 "Two-component Benard steady convection with surface adsorption", in Physicochemical Hydrodynamics: Interfacial Phenomena, M. G. Velarde (editor), Plenum Press, N.Y., pp. 343-357 (with X.-L. Chu & L.-Y. Chen).

-
61. 1988 Introduccion del libro "Wu Chang-Jiang. Drawings of the Qinghai-Tibet Highland", Madrid.

1989

84. 1989 "Benard-Marangoni convection in liquid layers with a deformable open surface: Note on the role of solute accumulation at the air-liquid interface", *J. Colloid Interface Sci.* **127**, 205-208 (with X.-L. Chu).
85. 1989 "Nonlinear transverse oscillatory motions at the open surface of a liquid layer subjected to the Marangoni effect", *Phys. Lett. A* **136**, 126-130 (with X.-L. Chu).
86. 1989 "Dissipative hydrodynamic oscillators. I. Marangoni effect and sustained longitudinal waves at the interface of two liquids", *Il Nuovo Cimento D* **11**, 709-716 (with X.-L. Chu).
87. 1989 "Dissipative hydrodynamic oscillators. II. Rayleigh-Benard problem for Newtonian and Viscoelastic fluids with and without rotation of the layer", *Il Nuovo Cimento D* **11**, 717-726 (with J. Jimenez-Fernandez).
88. 1989 "Dissipative hydrodynamic oscillators. III. Electrohydrodynamic interfacial waves", *Il Nuovo Cimento D* **11**, 727-737 (with X.-L. Chu & A. Castellanos).
89. 1989 "Transverse and longitudinal waves induced and sustained by surfactant gradients at liquid-liquid interfaces", *J. Colloid Interface Sci.* **131**, 471-484 (with X.-L. Chu).
90. 1989 "Dissipative hydrodynamic oscillators. V. Interfacial oscillations in finite containers", *Il Nuovo Cimento D* **11**, 1615-1629 (with X.-L. Chu).
91. 1989 "Dissipative hydrodynamic oscillators. VI. Transverse interfacial oscillations not obeying the Laplace-Kelvin law", *Il Nuovo Cimento D* **11**, 1631-1643 (with X.-L. Chu).
92. 1989 "Waves and Turbulence at interfaces", *Phys. Scripta T* **25**, 231-237 (with X.-L. Chu).

-
55. 1989 "Marangoni effect, instabilities and waves at interfaces", in Phase Transitions in Soft Condensed Matter, T. Riste & D. Sherrington (editors), Plenum Press, N.Y., pp. 139-143 (with X.-L. Chu).
-

62. 1989 "Non-formal Education", in Teaching Modern Physics-Condensed Matter, K. Luchner et al (editors), World Scientific, Londres & Singapore, pp. 367-373 (with B. Hodgson, W. Reusch & B. Kjollerstrom).
63. 1989 "Ray (geometric) and Wave (Physical) Optics with a laser", en Teaching Modern Physics-Condensed Matter, K. Luchner et al (Eds.), World Scientific, Londres & Singapore, p. 406 (with R. Fernandez).

1990

93. 1990 "Instabilities and Interfacial Waves", *Entropie* **26**, 82-88 (with X.-L. Chu) [Invited].

-
56. 1990 "Laser irradiation of matter and capillary hydrodynamics. A few aspects dealing with interfacial instabilities and oscillations", in Laseres y Reacciones Quimicas, A. Gonzalez-Ureña (editor), Eudema, Madrid, pp. 197-212 [Invited].
 57. 1990 "Interfacial Oscillations and Solitons driven by the Marangoni effect", in Nonlinear Evolution of Spatio-Temporal Structures in Dissipative Continuous Systems, F. H. Busse & L. Kramer (editors), Plenum Press, N.Y., pp. 159-167 (with X.-L. Chu) [Invited].
 58. 1990 "Interfacial Oscillators", in Low-Gravity Fluid Dynamics and Transport Phenomena, J. N. Koster & R. L. Sani (editors), AIAA, Washington D.C., **130**, pp. 241-271 (with X.-L. Chu) [Invited].

-
64. 1990 "Self-Organization and Evolution Through Fluctuations and Instabilities", in Organization and Change in Complex Systems, M. Alonso (editor), Paragon House, N.Y., pp. 255-259.
 65. 1990 "La Barraca de la Ciencia. A Decade of Science for the People in Spain", in La Dimensione dello sviluppo culturale, Academia Nazionale dei Lincei, Roma, pp.155-163.
 66. 1990 "La Barraca de la Ciencia: Una decada de divulgacion cientifica en Espana", *Arbor* **CXXXV**, nº 530, 35-48 (prepublication in AXE -Revue des residents du College d'Espagne, Paris, nº 2, July 1989, 15-29).
 67. 1990 "Algunos problemas a analizar" in Ante los años dos mil, ¿Que informacion estructurara la personalidad de los seres humanos?, Real Academia de Doctores, Madrid, pp. 25-33.

1991

94. 1991 "Korteweg-de Vries soliton excitation in Benard-Marangoni convection", *Phys. Rev.* **A 43**, 1094-1096 (with X.-L. Chu).
95. 1991 "Onset of possible solitons in surface tension-driven convection", *Phys. Scripta* **T 35**, 71-74 (with X.-L. Chu & A. N. Garazo).
96. 1991 "Dissipative Hydrodynamic Oscillators. VII. The two-component Lorenz model as a Duffing oscillator, and integrability", *Il Nuovo Cimento* **D 13**, 913-918 (with M. A. Fernandez-Sanjuan & J. L. Valero).
97. 1991 "Dissipative Korteweg-de Vries description of Marangoni-Benard oscillatory convection", *Phys. Fluids* **A 3**, 2295-2300 (with A. N. Garazo).
98. 1991 "Laser induced crossed-beam charge transfer: Collision energy effects of the Na ($3^2P_{3/2, 1/2}$) + I₂Na⁺ + I⁻₂ system", *J. Chem. Phys.* **95**, 5474-5475 (with L. Bañares & A. Gonzalez-Ureña).

-
59. 1991 "Interfacial Instabilities, Waves and Solitons excited by the Marangoni effect", in Nonlinear Wave Processes in Excitable Media, A. Holden, M. Markus & H. G. Othmer (editors), Plenum Press, N.Y., pp. 435-449 (with X.-L. Chu) [Invited].

60. 1991 "Solitons and other interfacial waves excited and sustained by capillarity", in Capillarity Today, A. Sanfeld & G. Petre (editors), Springer-Verlag, Berlin, pp. 108-112 (with X.-L. Chu & A. N. Garazo) [Invited].
61. 1991 "Marangoni-driven solitary waves", in Capillarity Today, A. Sanfeld & G. Petre (editors), Springer-Verlag, Berlin, pp. 261-267 (with H. Linde & P. D. Weidman) [Invited].
62. 1991 "Solitary waves driven by capillarity and Marangoni forces", in Nonlinear Dynamics of Structures, R. Z. Sagdeev et al (editors), World Scientific, London, pp. 117-125 (with A. N. Garazo) [Invited].
63. 1991 "Localized structures and solitary waves excited by interfacial stresses", in Spontaneous formation of space-time structures and criticality, T. Riste & D. Sherrington (editors), Kluwer, Dordrecht, pp. 263-272 (with A. N. Garazo & C. I. Christov) [Invited].

-
68. 1991 "Caos determinista: el nuevo paradigma", *Arbor* **CXXXVIII**, nº 543, 9-16 (with R. Chacon & F. Cuadros).
 69. 1991 "Teoria del cristal liquido. Pierre Gilles de Gennes, Nobel de Fisica", *Diario "El Pais" (Madrid)* (FUTURO, Suplemento de Ciencia, Tecnica e Informatica) 23 Octubre, nº 91, 1-3.
 70. 1991 "Pierre Gilles de Gennes, Premio Nobel de Fisica 1991", *Revista Esp. Fisica* **5** (4), 4-7.

1992

99. 1992 "Dissipative thermohydrodynamic oscillators", *Adv. Thermodynamics* **6**, 110-145 (with X.-L. Chu).
 100. 1992 "Internal Solitary Waves", *Studies Appl. Maths.* **86**, 167-184 (with P. D. Weidman).
 101. 1992 "Dissipative Hydrodynamic Oscillators. VIII. The Kelvin-Helmholtz instability of viscous liquids", *Il Nuovo Cimento D* **14**, 213-220 (with R. Wang, X.-L. Chu & A. Sanfeld).
 102. 1992 "Transverse and longitudinal waves at the air-liquid interface in the presence of an adsorption barrier", *J. Colloid Interface Sci.* **150**, 7-21 (with M. Hennenberg, X.-L. Chu & A. Sanfeld).
 103. 1992 "Evidence for solitary wave behavior in Marangoni-Benard convection", *Phys. Fluids A* **4**, 921-926 (with P. D. Weidman & H. Linde).
 104. 1992 "A prototype Helmholtz-Thompson Nonlinear oscillator", *Rev. Scient. Instruments* **63**, 4208-4212 (with E. del Rio & A. Rodriguez-Lozano).
 105. 1992 "On dynamic excitation of Marangoni instability", *Phys. Fluids A* **4**, 2394-2398 (with G. Z. Gershuni & A. A. Nepomnyashchy).
 106. 1992 "Mutual synchronization of chaotic self-oscillators with dissipative coupling", *Int. J. Bifurcation Chaos* **2**, 669-676 (with N. F. Rulkov, A. R. Volkovskii, A. Rodriguez-Lozano & E. del Rio).
 107. 1992 "Thermodynamic and Stochastic Theory of Transport Processes far from Equilibrium", *J. Phys. Chem.* **96**, 11054-11065 (with J. Ross, X.-L. Chu & A. Hjelmfelt).
 108. 1992 "Vibrational-thermocapillary parallel flows and stability", *Microgravity Quart.* **2**, 221-225 (with R. V. Birikh, V. A. Briskman, V. Myznikov & B. Roux).
-

64. 1992 "Summing up of the VIIIth European Symposium on Materials and Fluid Sciences in Microgravity", in *ELGRA Bull.* **14**, 82-86 (with D. T. J. Hurle) [Invited].
65. 1992 "Marangoni-driven solitary waves", in *ESA SP 333*, Paris, pp. 711-715 (with A. N. Garazo) [Invited].
66. 1992 "Vibrational-thermocapillary parallel flows and stability", in *ESA SP 333*, Paris, pp. 747-752 (with R. Birikh, V. Briskman, V. Myznikov & B. Roux).
67. 1992 "Conclusions VIIIth ESA Conference Materials and Fluids Sciences in Microgravity", in *ESA SP 333*, Paris, pp. 939-943 (with D. T. J. Hurle) [Invited].
68. 1992 "Oscillations and onset of chaos in a driven nonlinear oscillator with possible escape to infinity", in From Phase Transitions to Chaos (Topics in Modern Statistical Physics), G. Gyögyi, I. Kondor, L. Sasvari & T. Tel (editors), World Scientific, London, pp. 363-371 (with E. del Rio & A. Rodriguez-Lozano) [Invited].
69. 1992 "Chaotic Dynamics in Practice: An electronic circuit for a nonlinear oscillator with damping, forcing, and possible escape to infinity", in Chaotic Dynamics: Theory and Practice, T. Bountis (editor), Plenum, N.Y., pp. 263-273 (with E. del Rio & A. Rodriguez-Lozano).

71. 1992 "Pierre Gilles de Gennes, Premio Nobel de Fisica 1991", *Arbor* **CXLI**, nº 553, 9-16.
72. 1992 "Entre la necesidad y el azar", *Diario ABC* (Cultural-ABC de la musica) 31 enero, 39.
73. 1992 "La Ciencia como parte de la Cultura", *Saber/Leer* (Fundacion Juan March), Marzo, nº 53, 12.
74. 1992 "Caos determinista: Atractores, inestabilidad, transicion y bifurcaciones", *Arbor* **CXLI**, nº 556, 9-21 (with R. Chacon & F. Cuadros).
75. 1992 "Fronteras de la Ciencia. La Ciencia es parte de la Cultura" en *Aceite de Oliva*, Mira, Zaragoza, pp. 9-13.
76. 1992 "¿Que enseñamos? ¿Que aprenden? Cuidado con el abismo!", *Revista Esp. Fisica* **6** (4), 41-42 (with F. Cuadros).

1993

109. 1993 "Oblique and head-on collisions of solitary waves in Marangoni-Benard convection", *Phys. Fluids* **A5**, 1068-1070 (with H. Linde & X.-L. Chu).
110. 1993 "On localized solutions in an equation governing Benard-Marangoni convection", *Applied Maths. Modelling* **17**, 311-320 (with C. I. Christov).
111. 1993 "Wall reflections of solitary waves in Marangoni-Benard convection", *Phys. Fluids* **A5**, 3162-3166 (with H. Linde, X.-L. Chu & W. Walldhelm).
112. 1993 "Solitary waves driven by Marangoni stresses", *Adv. Space Res.* **13**, 109-117 (with H. Linde & X.-L. Chu).
113. 1993 "Solitary waves, solitons and related (nonlinear) waves in dissipative media", *Rev. Real Acad. Ciencias Exact. Fis. Nat. (Madrid)* **LXXXVII**, 405-423.

70. 1993 "Transverse and longitudinal waves at an air-liquid interface in the presence of an absorption barrier", in Instabilities in Multiphase Flows, G. Gouesbet & A. Berlemont (editors), Plenum Press, N.Y. pp. 183-192 (with M. Hennenberg, X.-L. Chu & A. Sanfeld) [Invited].
71. 1993 "1D and 2D Nonlinear evolution equations for Benard-Marangoni convection", in Instabilities and Nonequilibrium Structures, E. Tirapegui (editor), Kluwer, Dordrecht, pp. 213-223 (with A. N. Garazo) [Invited].

-
77. 1993 "Physics Education. A survey of problems and possible solutions", *Int. J. Mod. Phys. C, Phys. Comput.* **4**, 435-443 (Rep. in Physics Computing '92, R. A. de Groot & J. Nadrchal, editors, World Scientific, Londres & Singapore, pp. 201-209, 1993).
 78. 1993 "Oh fortuna cruel, injusta y voluble!", *Saber/Leer* (Fundacion Juan March) Febrero nº 62, 10-11.
 79. 1993 "Ciencia para la ciudadania. Catedra de Fisica en el ATENEO de Madrid", *Revista Esp. Fisica* **7** (1), 74-76.
 80. 1993 "Sobre la enseñanza de la ciencia. Algunos problemas y posibles soluciones", *Arbor* **CXLV**, nº 572, 33-46.
 81. 1993 "Termodinamica de los sistemas fisico-quimicos alejados del equilibrio y auto-organizacion. Parte 1", *Revista Quimicos Sur*, nº **35** (Tercer trimestre), 15-19; "Parte 2", *Ibidem*, nº **36** (Cuarto trimestre), 2-6 (with A. Lopez-Ruiz).

1994

114. 1994 "A three-dimensional description of solitary waves and their interaction in Marangoni-Benard layers", *Phys. Fluids* **6**, 187-198 (with A. A. Nepomnyashchy).
115. 1994 "Drop motion with surfactant transfer in a homogeneous surrounding", *Phys. Fluids* **6**, 451-468 (with A. Ye. Rednikov & Yu. S. Ryazantsev).
116. 1994 "Toward a thermodynamic theory of hydrodynamics: The Lorenz equations", *Phys. Fluids* **6**, 550-563 (with X.-L. Chu & J. Ross).
117. 1994 "Comments on Interfacial Instabilities: The Linde instability", *Chem. Engng. Sci.* **49**, 425-426 (with H. Linde, M. Hennenberg & X.-L. Chu).
118. 1994 "Marangoni-Benard convective instability driven by a heated divider", *Int. J. Heat Mass Transfer.* **37**, 493-498 (with R. V. Birikh, V. A. Briskman & R. N. Rudakov).
119. 1994 "Drop motion with surfactant transfer in an inhomogeneous medium", *Int. J. Heat Mass Transfer.* **37**, Suppl. 1, 361-374 (with A. Ye. Rednikov & Yu. S. Ryazantsev) [Invited].
120. 1994 "On the development of translational subcritical Marangoni instability for a drop with uniform internal heat generation", *J. Colloid. Interface Sci.* **164**, 168-180 (with A. Ye. Rednikov & Yu. S. Ryazantsev).
121. 1994 "Active drops and drop motions due to non-equilibrium phenomena", *J. Non-Equilib. Thermodyn.* **19**, 95-113 (with A. Ye. Rednikov & Yu. S. Ryazantsev).
122. 1994 "Synchronous chaotic behavior of a response oscillator with chaotic driving", *Chaos, Solitons & Fractals* **4**, 201-211 (with N. F. Rulkov, A. R. Volkovskii, A. Rodriguez-Lozano & E. del Rio).
123. 1994 "Melnikov's criterion and its experimental test using a nonlinear oscillator", *Chaos, Solitons & Fractals* **4**, 255-262 (with E. del Rio & A. Rodriguez-Lozano).
124. 1994 "Long time data series and difficulties with the characterization of chaotic attractors: a case with intermittency III", *Chaos, Solitons & Fractals* **4**, 2169-2179 (with E. del Rio & A. Rodriguez-Lozano).
125. 1994 "Note on the stability of limit cycles of an asymmetric (Helmholtz-Thompson) nonlinear oscillator", *J. Sound & Vibrat.* **172**, 283-288 (with E. del Rio & A. Rodriguez-Lozano).

126. 1994 "Wave number selection in convection and related problems", *Phys. Rev.* **E 50**, 1194-1197 (with A. A. Nepomnyashchy & M. I. Tribelsky).
127. 1994. "On the possibility of wave-induced chaos in a sheared, stably stratified fluid layer", *Nonlin. Processes Geophys.* **1**, 219-223 (with W. B. Zimmerman).
128. 1994 "On parametric excitation of thermocapillary and thermogravitational convective instability", *Microgravity Quart.* **4**, 215-220 (with G. Z. Gershuni, A. A. Nepomnyashchy & B. L. Smorodin).
129. 1994 "Experimental evidence for synchronous behavior of chaotic nonlinear oscillators with uni-directional or mutual driving", *Int. J. Bifurcation Chaos* **4**, 1003-1009 (with E. del Rio, A. Rodriguez-Lozano, N. F. Rulkov & A. R. Volkovskii).
130. 1994 "Inelastic interaction of Boussinesq solitons" *Int. J. Bifurcation Chaos* **4**, 1095-1112 (with C. I. Christov).
131. 1994 "Solitary waves, soliton bound states and chaos in a dissipative Korteweg-de Vries equation", *Int. J. Bifurcation Chaos* **4**, 1135-1146 (with V. I. Nekorkin).
132. 1994 "Solitons in real fluids", *J. Phys. (London)* **C 6**, Supp. 23A, 423-426 [Invited].
133. 1994 "Evolution and interactions of solitary waves (solitons) in nonlinear dissipative systems", *Phys. Scripta* **T 55**, 101-106 (with C. I. Christov).
134. 1994 "Nonlinear waves in stably stratified dissipative media. Solitary waves and turbulent bursts", *Phys. Scripta* **T 55**, 111-114 (with W. B. Zimmerman).
135. 1994 "Drop motion and the Marangoni effect. Interaction of modes" *Phys. Scripta* **T 55**, 115-118 (with A. Ye. Rednikov & Yu. S. Ryazantsev).
136. 1994 "Solitons in dissipative systems", *Bol. SEMA (Spanish Appl. Math. Soc. Bull.)* **nº 4**, 5-10 [Invited].
137. 1994 "Termodinamica no lineal", *Mem. Real Acad. Sevillana Ciencias (Spain)* **3**, 263-274 (text in English) [Invited].

-
82. 1994 "Almeria, espejo del mar... ¡Viva la UAL!", *Puerta Purchena* (Revista de la Casa de Almeria y La Alpujarra en Madrid), nº **26**, 6.
 83. 1994 "Reloj, no marques las horas", *Saber/Leer* (Fundacion J. March) Octubre nº **78**, 10-11.
 84. 1994 "Fluidos y fenomenos interfaciales", *Fronteras de la Ciencia y la Tecnica*, nº **5**, 40-41.

1995

138. 1995 "Dissipative solitons", *Physica D* **86**, 323-347 (with C. I. Christov) [Invited].
139. 1995 "Universal spatio-temporal scaling in the dynamics of one-dimensional pattern selection", *Phys. Rev.* **E 51**, 5132-5135 (with M. I. Tribelsky, S. Kai & H. Yamazaki).
140. 1995 "Further results on the evolution of solitary waves and their bound states of a dissipative Korteweg-de Vries equation", *Int. J. Bifurcation Chaos* **5**, 831-839 (with V. I. Nekorkin & A. G. Maksimov).
141. 1995 "Solitary waves of permanent form in a deep fluid with weak shear", *Phys. Fluids* **7**, 1357-1362 (with O. G. Derzho).

142. 1995 "Homoclinic orbits and solitary waves in a one-dimensional array of Chua's circuits", *I.E.E.E. Trans. Circuits & Systems* **42**, 785-801 (with V. I. Nekorkin, V. B. Kazantsev, N. F. Rulkov & L. O. Chua) [Invited].
 143. 1995 "The role of time-varying gravity on the motion of a drop induced by Marangoni instability", *Phys. Fluids* **7**, 2670-2678 (with A. Ye. Rednikov, V. N. Kurdyumov & Yu. S. Ryazantsev).
 144. 1995 "Cnoidal wave trains and solitary waves in a dissipation-modified Korteweg-de Vries equation", *Acta Applicandae Mathematicae* **39**, 457-475 (with A. Ye. Rednikov, Yu. S. Ryazantsev, A. A. Nepomnyashchy & V. N. Kurdyumov).
 145. 1995 "The motion of reacting drop under g-jitter", *Microgravity Quart.* **5**, 101-108 (with Yu. S. Ryazantsev, A. Ye. Rednikov & V. N. Kurdyumov).
 146. 1995 "Marangoni-Benard instability of a floating liquid layer with an internal, permeable, heated or cooled divider and two deformable open surfaces", *Int. J. Heat Mass Transfer* **38**, 2723-2731 (with R. V. Birikh, V. A. Briskman & R. N. Rudakov).
-
72. 1995 "Solitons in dissipative systems", in Chaos and Complexity, J. Trân Thanh Vân, P. Berge, R. Conte & M. Dubois (editors), Eds. Frontieres, Paris, pp. 35-40 [Invited].
 73. 1995 "Solitary-waves solutions of a generalized wave equation with higher-order dispersion", in Continuum Models and Discrete Systems (Proceedings CMDS-8), K. Markov (editor), World Scientific, Singapore, (with Y. Steyt & C. I. Christov), pp. 471-479.
 74. 1995 "Vibrational-thermocapillary convection and possibilities of heat/mass transfer control in microgravity", in Proceedings International Aerospace Congress IAC-94, Moscow, **1**, 376-389.
 75. 1995 "Marangoni instability and self-sustained drop motion", in Fluid Physics. Lecture Notes of Summer Schools, M. G. Velarde & C. I. Christov (editors), World Scientific, London, pp. 265-274 (with A. Ye. Rednikov & Yu. S. Ryazantsev).
 76. 1995 "A pathway to interfacial turbulence", in Fluid Physics. Lecture Notes of Summer Schools, M. G. Velarde & C. I. Christov (editors), World Scientific, London, pp. 275-285 (with M. Santiago & M. Vignes-Adler).
 77. 1995 "Internal solitary waves in stratified shear flows", in Fluid Physics. Lecture Notes of Summer Schools, M. G. Velarde & C. I. Christov (editors), World Scientific, London, pp. 341-352 (with W. B. Zimmerman).
 78. 1995 "Evidence for solitary waves in Marangoni-Benard convection", in Fluid Physics. Lecture Notes of Summer Schools, M. G. Velarde & C. I. Christov (editors), World Scientific, London, pp. 423-432 (with P. D. Weidman & H. Linde).
 79. 1995 "Further evidence of solitonic behavior in Benard-Marangoni convection: periodic wave trains", in Fluid Physics. Lecture Notes of Summer Schools, M. G. Velarde & C. I. Christov (editors), World Scientific, London, pp. 433-441 (with H. Linde, A. A. Nepomnyashchy & W. Waldhelm).
 80. 1995 "On the possibility of solitary waves at the surface of a liquid conductor", in Fluid Physics. Lecture Notes of Summer Schools, M. G. Velarde & C. I.

- Christov (editors)*, World Scientific, London, pp. 442-459 (with A. Gonzalez & A. Castellanos).
81. 1995 "Dissipation-modified Korteweg-de Vries equation describing Marangoni-Benard convection: Variations on asymptotics", in Fluid Physics. Lecture Notes of Summer Schools, *M. G. Velarde & C. I. Christov (editors)*, World Scientific, London, pp. 460-471 (with A. Ye. Rednikov & Yu. S. Ryazantsev).
 82. 1995 "Solitons and Dissipation", in Fluid Physics. Lecture Notes of Summer Schools, *M. G. Velarde & C. I. Christov (editors)*, World Scientific, London, pp. 472-506 (with C. I. Christov).
 83. 1995 "Solitons and solitonic wave trains in dissipative flows", in Fluctuation Phenomena: Disorder and Nonlinearity, *A. R. Bishop, S. Jimenez & L. Vazquez (editors)*, World Scientific, London, pp. 169-177 [Invited].
 84. 1995 "Fluids and Transport Phenomena", in European Low-Gravity Physical Sciences in Retrospect and in Prospect, *Y. Malmejac (editor)*, ELGRA, Genova, pp. 25-40 [Invited].
 85. 1995 "Critical Phenomena", in European Low-Gravity Physical Sciences in Retrospect and in Prospect, *Y. Malmejac (editor)*, ELGRA, Genova, pp. 95-102 [Invited].
-
85. 1995. "Por los fluidos y sus corrientes, numero a numero", *Revista Esp. Fisica* **9** (3), 12-20.
 86. 1995 "Ensenanza y aprendizaje de la ciencia", *Diario ABC (ABC-Cultural)* 5 mayo, 55.
 87. 1995 "Educacion y ciencia: una sola cultura", *Diario Ideal (ed. Almeria)* 13 Julio, 10.
 88. 1995 "Educacion y ciencia: una sola cultura", *Boletin Institucion Educativa SEK* (Informaciones para la educacion. Documentos para la educacion), Junio, 1-4.
 89. 1995 "Educacion y ciencia: una sola cultura", *Puerta Purchena* (Revista de la Casa de Almeria y La Alpujarra en Madrid), nº **30**, 14-15.
 90. 1995 "Educacion y ciencia: una sola cultura", *La Vanguardia* (Suplemento Ciencia y Vida) 18 Noviembre, 2.
 91. 1995 "Educacion y ciencia: una sola cultura", *A Distancia* (Revista UNED), Otono, 55-56.
 92. 1995 "Cuerpos en el espacio", *Ciencia, Tecnologia, Medio Ambiente (Anuario 1996)*, Ediciones *El Pais*, pp. 302-303.
 93. 1995 "Teaching Modern Physics and Modern Teaching of Physics" in Teaching Modern Physics. Statistical Physics and Thermodynamics (Proceedings 4th ICPE/IUPAP International Conference), *M. G. Velarde & F. Cuadros (editors)*, World Scientific, Londres, pp. 10-18.

1996

147. 1996 "Head-on collision of two concentric cylindrical ion acoustic solitary waves", *Phys. Rev.* **E 53**, 2988-2991 (with G.-X. Huang).
148. 1996 "Head-on collisions of dark solitons near the zero-dispersion point in optical fibers", *Phys. Rev.* **E 54**, 3048-3051 (with G.-X. Huang).
149. 1996 "Well-posed Boussinesq paradigm with purely spatial higher-order derivatives", *Phys. Rev.* **E 54**, 3621-3638 (with C. I. Christov & G. A. Maugin).
150. 1996 "Short-wavelength instability in systems with slow long-wavelength dynamics", *Phys. Rev.* **E 54**, 4973-4981 (with M. I. Tribelsky).
151. 1996 "Travelling waves in a circular array of Chua's circuits", *Int. J. Bifurcation Chaos* **6**, 473-484 (with V. I. Nekorkin & V. B. Kazantsev).
152. 1996 "A Center manifold approach to solitary internal waves in a sheared, stably stratified fluid layer", *Nonlin. Processes Geophys.* **3**, 110-114 (with W. B. Zimmerman).

153. 1996 "Drop motions and interfacial instability", *J. Phys. Condens. Matter* **8**, 9233-9247 (with A. Ye. Rednikov & Yu. S. Ryazantsev) [Invited].
 154. 1996 "Patterns, defects, and evolution of Benard-Marangoni cells", *Int. J. Bifurcation Chaos* **6**, 1665-1671 (with J. Bragard & J. Pontes).
 155. 1996 "Gap solitons, resonant kinks, and intrinsic localized modes in parametrically excited diatomic lattices", *Int. J. Bifurcation Chaos* **6**, 1775-1787 (with G.-X. Huang & S.-Y. Lou).
 156. 1996 "Spatial disorder and waves in a ring chain of bistable oscillators", *Int. J. Bifurcation Chaos* **6**, 1845-1858 (with V. I. Nekorkin & V. A. Makarov).
 157. 1996 "Avalanche-collapse mechanism: a model for excitability", *Int. J. Bifurcation Chaos* **6**, 1873-1881 (with F. Plaza).
 158. 1996 "Numerical study of patterns and their evolution in finite geometries", *Int. J. Bifurcation Chaos* **6**, 1883-1890 (with J. Pontes & C. I. Christov).
 159. 1996 "On automated derivation of amplitude equations in nonlinear bifurcation problems", *Int. J. Bifurcation Chaos* **6**, 2163-2167 (with L. M. Pismen & B. Y. Rubinstein).
 160. 1996 "On parametric excitation of Marangoni instability in a liquid layer with free deformable surface", *Microgravity Quart.* **6**, 203-209 (with G. Z. Gershuni, A. A. Nepomnyashchy & B. L. Smorodin).
-
86. 1996 "Splitting Methods for free-surface viscous flows subjected to thermal Marangoni effect", in Advanced Concepts and Techniques in Thermal Modelling, D. Lemonnier, J. B. Saulnier & M. Fiebig (editors), Elsevier, Amsterdam, pp. 142-148 (with C. I. Christov & J. Pontes).
 87. 1996 "Solitary-wave solutions of a generalized wave equation with higher-order dispersion", in Continuum Models and Discrete Systems, Procs. CMDS-8, K. Markov (editor), World Scientific, Singapore, pp. 471-479 (with Y. Steyt & C. I. Christov).
 88. 1996 "Surface tension gradient-driven wave motion in shallow liquid layers", in Waves and Nonlinear Processes in Hydrodynamics, B. Gjevik, J. Grue & J. E. Weber (editors), Kluwer, Dordrecht, pp. 191-206 (with H. Linde, A. Ye. Rednikov, Yu. S. Ryazantsev, A. A. Nepomnyashchy & V. N. Kurdyumov) [Invited].
 89. 1996 "Toward a non-equilibrium non-linear thermodynamics", in Dynamics of Multiphase Flows Across Interfaces, A. Steinchen (editor), Springer-Verlag, Berlin, pp. 253-267 [Invited].
 90. 1996 "Nonequilibrium surface tension driven phenomena", in Proceedings Statphys 19, Hao Bai-Lin (editor), World Scientific, Singapore, pp. 189-204 [Invited].
 91. 1996 "Nonuniform interfacial tension-driven fluid flows", in Materials and Fluids under low Gravity, L. Ratke, H. Walter & B. Feuerbacher (editors), Springer-Verlag, Berlin, pp. 283-298 [Invited].
 92. 1996 "Ordered and spatially chaotic patterns in lattice electronic systems", in NDES'96. Procs. Fourth International Workshop on Nonlinear Dynamics of Electronic Systems, pp. 207-212 (with V. I. Nekorkin, V. A. Makarov & V. B. Kazantsev).
 93. 1996 "Self-organized wave behavior due to mass transfer through a liquid surface", in Self-Organization in Activator-Inhibitor Systems, H. Engel, F. J.

Niedernostheide, H. G. Purwins & E. Schöll (editors), Wissenschaft und Technik Verlag, Berlin, pp. 240-245 (with A. Wierschem, H. Linde & W. Waldhelm).

94. 1996 "¿Ciencias o Letras?: Una nueva (sola) instruccion", *Cuadernos Cives*, Abril, nº 3, 22-24.

1997

161. 1997 "Gap solitons and resonant kinks in Heisenberg ferromagnetic chains with bond alternation", *Phys. Rev. B* **55**, 336-346 (with G.-X. Huang & S.-H. Zhu).
162. 1997 "Benard convection flows", *J. Non-Equilib. Thermodyn.* **22**, 1-19 (with J. Bragard).
163. 1997 "Creation and extinction of cells in Benard convection", *J. Non-Equilib. Thermodyn.* **22**, 162-168 (with A. Wierschem, P. Cerisier & P. Gallet).
164. 1997 "Spatial disorder and pattern formation in lattices of coupled bistable elements", *Physica D* **100**, 330-342 (with V. I. Nekorkin, V. A. Makarov & V. B. Kazantsev).
165. 1997 "Excitability following an avalanche-collapse process", *Europhys. Lett.* **38**, 85-90 (with F. Plaza, F. T. Arecchi, S. Boccaletti, M. Ciofini & R. Meucci).
166. 1997 "The emergence of form by replication", *Proc. Natl. Acad. Sci. USA*, **94**, 5024-5027 (with V. I. Nekorkin, V. B. Kazantsev & J. Ross).
167. 1997 "The influence of the thermocapillary effect on the parametric excitation of waves", *Dokl. Akad. Nauk. Russia* **352**, 616-619 (with R. V. Birikh, V. A. Briskman & A. A. Cherepanov) (In Russian); English translation: *Physics-Dokl.* **42**, 93-96.
168. 1997 "Interfacial wave motions due to Marangoni instability. I. Traveling periodic wave trains in square and annular containers", *J. Colloid Interface Sci.* **188**, 16-26 (with H. Linde, A. Wierschem, W. Waldhelm, K. Loeschcke & A. Ye. Rednikov).
169. 1997 "On the spreading of an insoluble surfactant over a thin viscous liquid layer", *J. Colloid Interface Sci.* **190**, 104-113 (with V. M. Starov & A. de Ryck).
170. 1997 "Dissolution of a drop on a liquid surface leading to surface waves and interfacial turbulence", *J. Colloid Interface Sci.* **191**, 65-80 (with M. Santiago-Rosanne & M. Vignes-Adler).
171. 1997 "Implicit time splitting for fourth-order parabolic equations", *Comput. Methods Appl. Mech. Engrg.* **148**, 209-224 (with C. I. Christov, J. Pontes & D. Walgraef).
172. 1997. "Pulses, fronts and chaotic wave trains in a one-dimensional Chua's lattice", *Int. J. Bifurcation Chaos* **7**, 1775-1790 (with V. B. Kazantsev & V. I. Nekorkin).
173. 1997 "Oblique interactions of dark spatial solitons in self-defocusing media", *J. Optical Soc. Am. B* **14**, 2850-2855 (with G.-X. Huang).
174. 1997 "Mutual synchronization of two lattices of bistable elements", *Phys. Lett. A* **236**, 505-512 (with V. I. Nekorkin & V. B. Kazantsev).
175. 1997 "Dynamic copying in multilayered bistable lattices", *Prikladnaya Nelineinaya Dinamika* **5**, 56-68 (with V. I. Nekorkin & V. B. Kazantsev) (in Russian).

94. 1997 "Patterns and Waves in interacting lattice bistable systems", in Proceedings Nonlinear Dynamics NDES'97, Moscow, pp. 324-329 (with V. I. Nekorkin & V. B. Kazantsev).
95. 1997 "Influence of a high-frequency vibration on the Marangoni instability of two-layer system", in Procs. Joint Xth European & VIth Russian Symposium on Physical Sciences in Microgravity, V. S. Avduyevsky & V. I. Polezhaev (editors), RAS, Moscow, pp. 205-212 (with R. V. Birikh, V. A. Briskman & R. N. Rudakov).

95. 1997 "Fluidos por doquier", *Saber/Leer* (Fundacion J. March), Abril, nº **104**, 10-11.
96. 1997 "En torno a G. I. Taylor, los fluidos y Cambridge", *Arbor* **156**, nº 615, 47-89.
97. 1997 "Vision mecanicista de la sinapsis", *Rev. R. Acad. Cienc. Exact. Fis. Nat. (Esp.)* **91**, 301-309.

1998

176. 1998 "Drops, liquid layers and the Marangoni effect", *Phil. Trans. R. Soc. London A* **356**, 829-844. (Reprinted in Marangoni and Interfacial Phenomena in Materials Processing, E. D. Hondros, M. McLean & K. C. Mills (editors), Cambridge Univ. Press, Cambridge, pp. 15-29) [Invited].
177. 1998 "Benard-Marangoni convection: planforms and related theoretical predictions", *J. Fluid. Mech.* **368**, 165-194 (with J. Bragard).
178. 1998 "Thermocapillary convection in two-layer systems", *Int. J. Heat Mass Transfer* **41**, 1499-1511 (with Q.-S. Liu & B. Roux).
179. 1998 "Two-layer Benard-Marangoni instability and the limit of transverse and longitudinal waves", *Phys. Rev. E* **57**, 2872-2884 (with A. Ye. Rednikov, P. Colinet & J. C. Legros).
180. 1998 "Controlled disordered patterns and information transfer between coupled neural lattices with oscillatory states", *Phys. Rev. E* **57**, 3344-3351 (with V. I. Nekorkin, V. B. Kazantsev & M. I. Rabinovich).
181. 1998 "Cylindrical solitary waves and their interaction in Benard-Marangoni layers", *Phys. Rev. E* **57**, 5473-5482 (with G.-X. Huang & V. N. Kurdyumov).
182. 1998 "Pattern interaction and spiral waves in a two-layer system of excitable units", *Phys. Rev. E* **58**, 1764-1773 (with V. I. Nekorkin, V. B. Kazantsev & L. O. Chua).
183. 1998 "Strain solitary waves in an elastic rod embedded in another elastic external medium with sliding", *Phys. Rev. E* **58**, 3854-3864 (with A. V. Porubov, A. M. Samsonov & A. V. Bukhanovsky).
184. 1998 "Clustering and phase resetting in a chain of bistable nonisochronous oscillators", *Phys. Rev. E* **58**, 5742-5747 (with V. I. Nekorkin & V. A. Makarov).
185. 1998 "Thermocapillary overstability and excitation of surface waves", *J. Jpn. Soc. Microgravity Appl.* **15**, Supp. II, 372-377 (with R. V. Birikh, S. V. Boushoueva & V. A. Briskman).
186. 1998 "Liquid equilibrium instability and overcritical convection caused by the Marangoni effect on free surface partially covered by solid elements", *J. Jpn. Soc. Microgravity Appl.* **15**, Supp. II, 388-393 (with R. V. Birikh, V. A. Briskman & O. E. Shklyaev).

96. 1998 "Time-dependent Benard-Marangoni instability and waves", in Time-Dependent Nonlinear Convection, Adv. Fluid Mech. Series, P. A. Tyvand

- (editor), Computational Mechanics Publications, Southampton, ch. 6, pp. 177-218 (with A. Ye. Rednikov) [Invited].
97. 1998 "The Schrödinger method for water wave kinematics", in Ocean Wave Kinematics, Dynamics and Loads on Structures, J. Zhang (editor), ASCE, Reston, VA, pp. 76-83 (with K. Trulsen, J.-M. Temmos, K. B. Dysthe & O. T. Gudmestad).
 98. 1998 "Spreading of surfactant solutions over hydrophobic substrate", in Adsorption by Porous Solids, R. Staudt (editor), Fortschritt-Berichte VDI, Reihe 3, Nr. 555, pp. 92-103 (with V. M. Starov & S. R. Kosvintsev) [Invited].
 99. 1998 "Double Diffusive Instabilities and Microgravity", *Annals European Acad. Sci. Arts* **22**, n. VIII, 35-48 (with S. Van Vaerenbergh, J. C. Legros, P. Colinet, M. Bestehorn, G. Lebon, A. Thess & C. Karcher).
 100. 1998 "Models of neurons having oscillations below the excitation threshold" *Isv. B. Radiofiz.* **XLI**, 1623-1635 (with V. B. Kazantsev & V. I. Nekorkin) (in Russian).
 101. 1998 "Patterns and waves in Benard layers induced by the Marangoni effect", in Des Phenomenes Critiques au Chaos, P. Manneville (editor), C.E.A., Saclay, pp. 93-111 [Invited].

-
98. 1998 "Fluidos y corrientes", *Atlantica* 20, 48-49 (numero especial AGUA; special issue on WATER: Expo-98-Lisboa/Libonne) (English transl.: "Fluids and flows", *ibidem* 20, 197).
 99. 1998 "Hay algun amigote en la sala?", in Fago Φ29 y los origenes de la Biologia Molecular en Espana (Book with personal reminiscences and scientific contributions to honor E. Vinuela on his 60th birthday), CBM, Madrid, pp. 58-59 (Rep.: J. Avila, M. Perucho & M. Lopez-Otin, editors, CSIC-Biblioteca de Ciencias, pp. 71-73, Madrid, 2003)
 100. 1998 "Metaphors may not be forbidden, and how a theoretical physicist naively approaches the problem of replication of form", in Fago Φ29 y los origenes de la Biologia Molecular en Espana (Book with personal reminiscences and scientific contributions to honor E. Vinuela on his 60th birthday), CBM, Madrid, pp. 314-317 (Rep.: J. Avila, M. Perucho & M. Lopez-Otin, editors, CSIC-Biblioteca de Ciencias, pp. 407-411, Madrid, 2003).
 101. 1998 "De azules y difraccion", Presentacion del libro "Catalogo pinturas/Catalogue exhibit paintings E. Vega" (English transl.: "Shades of Blue and Diffraction"), Madrid.

1999

187. 1999 "Laboratory evidence of three-dimensional frequency downshift of waves in a long tank", *Phys. Fluids A* **11**, 235-237 (with K. Trulsen & C. T. Stansberg).
188. 1999 "Exact periodic solutions of the complex Ginzburg-Landau equation", *J. Math. Phys.* **40**, 884-896 (with A. V. Porubov).
189. 1999 "On the parametric excitation of thermoelectric instability in a liquid layer open to air", *Int. J. Heat Mass Transfer.* **42**, 3159-3168 (with B. L. Smorodin & G. Z. Gershuni).
190. 1999 "Image transfer in multilayered assemblies of lattices of bistable oscillators", *Phys. Rev. E* **59**, 4515-4522 (with V. I. Nekorkin & V. B. Kazantsev).
191. 1999 "Interfacial wave motions due to Marangoni instability. II. Three-dimensional characteristics of surface waves in annular containers", *J. Colloid Interface Sci.* **212**, 365-383 (with A. Wierschem, H. Linde & W. Waldhelm).
192. 1999 "Clusters in an assembly of globally coupled bistable oscillators", *Eur. Phys. J. B* **9**, 533-543 (with V. I. Nekorkin & M. L. Voronin).

193. 1999 "Wave propagation along interacting fiber-like lattices", *Eur. Phys. J. B* **11**, 677-685 (with V. I. Nekorkin, V. B. Kazantsev & D. V. Artyukhin).
 194. 1999 "Strong dispersive effects on internal nonlinear waves in a sheared, stably stratified fluid layer", *Wave Motion* **30**, 159-173 (with W. B. Zimmerman).
-
102. 1999 "Interfacial turbulence and mass transfer through interfaces", *ESA SP 433*, Paris, pp. 211-218 (with P. Colinet & J. C. Legros).
 103. 1999 "Processes with double diffusive instabilities studied in microgravity", *ESA SP 433*, Paris, pp. 241-248 (with S. Van Vaerenbergh, J. C. Legros, P. Colinet, M. Bestehorn, G. Lebon, A. Thess & C. Karcher).
 104. 1999 "Capillary phenomena at interfaces between partly miscible fluids", *ESA SP 433*, Paris, pp. 357 (with P. Colinet & J. C. Legros).
 105. 1999 "Physical Sciences and Applications (Summary by Splinter Session Chairmen)" *ESA SP 433*, Paris, pp. 663-664 (with J. J. Favier) [Invited].
 106. 1999 "Waves generated by surface tension gradients and instability", in *Fluid Dynamics at Interfaces*, W. Shyy & R. Narayanan (editors), Cambridge Univ. Press, Cambridge, pp. 43-56 (with A. Ye. Rednikov & H. Linde) [Invited].
 107. 1999 "Electroconvective instability of thermogravitational flow in a vertical capacitor", in *Proceedings ICDL-99, Japan*, pp. 37-40 (with S. R. Kosvintsev, I. Yu. Makarikhin & S. A. Zhdanov).
 108. 1999 "Spatio-temporal patterns during mass transfer through a liquid surface", in *Similarity Methods*, B. Kroplin, S. Rudolph and S. Bruckner (editors), I.S.D.L.R., Stuttgart, pp. 157-162 (with A. Wierschem, W. Waldhelm and H. Linde).
 109. 1999 "Thermocapillary instability of real liquids interfaces", in *Convection in Immiscible Liquid-Liquid Systems*, V. A. Briskman & R. V. Birikh (editors), R.A.N., Ekaterinburg, pp. 25-44 (with R. V. Birikh, V. A. Briskman & R. N. Rudakov) [in Russian].
-
102. 1999 "G. K. Batchelor, *The Life and Legacy of G. I. Taylor*", *Isis* **90**, 617-618 (Recension libro/Book review) [Invited].
 103. 1999 "Duda, heterodoxia y progreso", *Boletin de informacion* (Fundacion BBV), nº **17**, 4-5.
- 2000**
195. 2000 "On nonlinear waves in an elastic solid", *Comptes Rendus, Acad. Sci. (Paris) II b* **328**, 165-170 (with A. V. Porubov).
 196. 2000 "Surface tension and dynamic contact angle of water in thin quartz capillaries", *J. Colloid Interface Sci.* **222**, 51-54 (with V. D. Sobolev, N. V. Churaev & Z. M. Zorin).
 197. 2000 "Spreading of surfactant solutions over hydrophobic substrates", *J. Colloid Interface Sci.* **227**, 185-190 (with V. M. Starov & S. R. Kosvintsev).
 198. 2000 "Dispersive-dissipative solitons in nonlinear solids", *Wave Motion* **31**, 197-207 (with A. V. Porubov).
 199. 2000 "Rayleigh-Marangoni oscillatory instability in a horizontal liquid layer heated from above: coupling and mode-mixing of internal and surface dilational waves", *J. Fluid. Mech.* **405**, 57-77 (with A. Ye. Rednikov, P. Colinet & J. C. Legros).

200. 2000 "Electrothermoconvective instability of an ohmic liquid layer in an unsteady electric field", *J. Electrostat.* **48**, 261-277 (with B. L. Smorodin).
201. 2000 "Spike-burst and other oscillations in a system composed of two coupled, drastically different elements", *Eur. Phys. J.* **B 16**, 147-155 (with V. I. Nekorkin & V. B. Kazantsev).
202. 2000 "Soliton-like waves on dissipative Toda lattices", *Int. J. Bifurcation Chaos* **10**, 1075-1089 (with V. A. Makarov & W. Ebeling).
203. 2000 "On weakly nonlinear modulation of waves on deep water", *Phys. Fluids* **A 12**, 2432-2437 (with K. Trulsen, I. L. Kliakhandler & K. B. Dysthe).
204. 2000 "Onset of oscillatory interfacial instability and wave motions in Benard layers", *Adv. Appl. Mech.* **37**, 167-238 (with A. A. Nepomnyashchy & M. Hennenberg) [Invited].
205. 2000 "Dynamics of coupled gap solitons in diatomic lattices with cubic and quartic nonlinearities", *Phys. Rev.* **E 62**, 2827-2839 (with B. Hu & G.-X. Huang).
206. 2000 "Localized finite-amplitude disturbances and selection of solitary waves", *Phys. Rev.* **E 62**, 4959-4962 (with I. L. Kliakhandler & A. V. Porubov).
207. 2000 "Internal waves excited by the Marangoni effect", *Phys. Rev.* **E 62**, 6522-6530 (with A. Wierschem & H. Linde).
208. 2000 "Synchronization, reentry and failure of spiral waves in a two-layer discrete excitable system", *Phys. Rev.* **E 63**, 16212-16220 (with V. B. Kazantsev, V. I. Nekorkin & D. V. Artyukhin).
209. 2000 "A simple generalized excitability model mimicking salient features of neuron dynamics", *J. Stat. Phys.* **101**, 665-678 (with A. Giaquinta & M. Argentina).
210. 2000 "On the role of porosity in the Stokes flow around a solid particle", *J. Non-Equilib. Thermodyn.* **25**, 205-214 (with A. N. Tyatyushkin).
211. 2000 "Chaos and hyperchaos in a model of the Belousov-Zhabotinsky reaction in a batch reactor", *J. Non-Equilib. Thermodyn.* **25**, 269-278 (with J. M. Nieto-Villar).
212. 2000 "Oscillatory instability and high-frequency wave modes in a Marangoni-Benard layer with deformable free surface", *J. Non-Equilib. Thermodyn.* **25**, 381-405 (with A. Ye. Rednikov, P. Colinet & J. C. Legros).
213. 2000 "Numerical approach to pattern selection in a model problem for Benard convection in finite fluid layer", *Annu. Univ. Sofia* **93**, 157-175 (with J. Pontes & C. I. Christov).
214. 2000 "Convective instability of a plane horizontal poorly conducting fluid layer in alternating and modulated electric fields", *Izv. Ross. Akad. Nauk, Mekh. Zhidk. Gaza N.* **3**, 31-38 (with B. L. Smorodin) [in Russian]; English translation: *Fluid Dynamics* **35** (3), 339-345.
215. 2000 "Influence of surfactant on the instability of a downflowing liquid film", *Izv. Ross. Akad. Nauk, Mekh. Zhidk. Gaza N.* **4**, 56-67 (with V. Ya. Shkadov & V. P. Shkadova) [in Russian]; English translation: *Fluid Dynamics* **35** (4), 515-524.
216. 2000 "Dispersion-modified Burgers description for nonlinear surface wave excitations in Benard-Marangoni convection", *Commun. Theoret. Phys.* **34**, 321-326 (with G.-X. Huang).

110. 2000 "Nonlinear Waves and (dissipative) solitons in thin liquid layers subjected to surfactant gradients", in Nonlinear Waves in Multi-Phase Flow, H.-C. Chang (editor), Kluwer, Dordrecht, pp. 57-67 (with A. Ye. Rednikov) [Invited].
111. 2000 "Surface waves during absorption", Procs. GAMM-2000, ZAMM, 2000 (with A. Wierschem & H. Linde).
112. 2000 "Morphogenese von Kiesel-Konkretionen mit komplexen Dissipativen Skulpturen", in Selbstorganisation (Jahrbuch für Komplexität in den Natur-, Sozial- und Geisteswissenschaften) (Non-Equilibrium Processes and Dissipative Structures in Geoscience), **11**, 141-185 (with H. Linde and G. Linde).

104. 2000 "Crear, criticar e historiar", *Saber/Leer* (Fundacion J. March), Mayo, nº **135**, 10-11.
105. 2000 "Algunos conceptos y metodos de valor cientifico universal (Desde la complejidad de la naturaleza a la simplificacion como medio de entenderla y describirla coherentemente)", Real Academia de Doctores, Madrid, 71 pp.
106. 2000 "A. Fernandez Diaz: *Dinamica caotica en Economia. Teoria y aplicaciones*, McGraw-Hill, Madrid, 2000", *Investigacion y Ciencia*, nº 288, 92 (Recension libro/Book review).
107. 2000 "Patterns, waves and chaos, and their replication in active lattices", *Rendiconti Sem. Mat. Fis. Milano* **67**, 181-189.
108. 2000 "Probabilidad, complejidad y caos", in *La Ciencia en tus manos*, P. Garcia-Barreno (director), Espasa Calpe, Madrid, pp. 905-929 [Invited].
109. 2000 "Por que la uva de mi pueblo es la mejor?", *La mirada limpia*, nº 0, 62-63.

2001

217. 2001 "On second harmonic generation and the onset of simultaneous capillary-gravity solitary waves (simultons or quadratic solitons)", *Comptes Rendus, Acad. Sci. (Paris) II b* **329**, 13-18 (with G.-X. Huang).
218. 2001 "Spiking behavior in a noise-driven system combining oscillatory and excitatory properties", *Phys. Rev. Lett.* **86**, 3431-3434 (with V. A. Makarov & V. I. Nekorkin).
219. 2001 "Dewetting: Film rupture by nucleation in the spinodal regime", *Phys. Rev. Lett.* **87**, 16104-1-4 (with U. Thiele & K. Neuffer).
220. 2001 "On the spreading of partially miscible liquids", *J. Colloid Interface Sci.* **234**, 375-383 (with M. Santiago-Rosanne & M. Vignes-Adler).
221. 2001 "On the interfacial deformation of a magnetic liquid drop under the simultaneous action of electric and magnetic fields", *J. Colloid Interface Sci.* **235**, 46-58 (with A. N. Tyatyushkin).
222. 2001 "Interfacial wave motions due to Marangoni instability. III. Solitary Waves and (Periodic) Wavetrains and Their Collisions and Reflections Leading to Dynamic Network (Cellular) Patterns in Large Containers", *J. Colloid Interface Sci.* **236**, 214-224 (with H. Linde, W. Waldhelm & A. Wierschem).
223. 2001 "Faraday ripples, parametric resonance, and the Marangoni effect", *J. Colloid Interface Sci.* **238**, 16-23 (with R. V. Birikh, V. A. Briskman & A. A. Cherepanov).
224. 2001 "On the parametric excitation of electrothermal instability in a dielectric liquid layer using an alternating electric field", *J. Electrostat.* **50**, 205-226 (with B. L. Smorodin).

225. 2001 "Dynamic contact angles of water in ultrathin capillaries", *Kolloid Zh.* **63**, 127-131 (with V. D. Sobolev, N. V. Churaev & Z. M. Zorin) [in Russian]; English translation: *Colloid J.* **63**, 119-123.
 226. 2001 "Synchronization in two-layer bistable coupled map lattices", *Physica D* **151**, 1-26 (with V. I. Nekorkin & V. B. Kazantsev).
 227. 2001 "Phase resetting, clusters and waves in a lattice of coupled oscillatory units", *Int. J. Bifurcation Chaos* **11**, 109-122 (with V. A. Makarov & V. I. Nekorkin).
 228. 2001 "Rheological behaviour of solutions of poly (2-hydroxyethyl methacryl amide) in glycerine", *Polymer* **42**, 7395-7401 (with S. R. Kosvintsev, E. Riande & J. Guzman).
 229. 2001 "Experimental evidence on the structure and evolution of the penta-hepta defect in hexagonal lattices due to Benard-Marangoni convection", *Int. J. Bifurcation Chaos* **11**, 1261-1273 (with V. O. Afenchenko, A. B. Ezersky & A. V. Nazarovsky).
 230. 2001 "Dark solitons and their head-on collisions in Bose-Einstein condensates", *Phys. Rev. A* **64**, 13617-1-11 (with G.-X. Huang & V. A. Makarov).
 231. 2001 "Properties of surface wave trains excited by mass-transfer through a liquid surface", *Phys. Rev. E* **64**, 22601-1-4 (with A. Wierschem & H. Linde).
 232. 2001 "Film rupture in the diffuse interface model coupled to hydrodynamics", *Phys. Rev. E* **64**, 31602-1-14 (with U. Thiele, K. Neuffer & Y. Pomeau).
 233. 2001 "Dissipative Toda-Rayleigh lattice and its oscillatory modes", *Phys. Rev. E* **64**, 36601-1-14 (with V. A. Makarov, E. del Rio & W. Ebeling).
 234. 2001 "Spatio-temporal intermittency in the critical dynamics of DC-driven two-dimensional frustrated Josephson arrays", *Phys. Rev. B* **64**, 184513-1-7 (with I. F. Marino).
 235. 2001 "The nonlinear Schrödinger method for water wave kinematics on finite depth", *Wave Motion* **33**, 379-395 (with K. Trulsen & O. T. Gudmestad).
 236. 2001 "Sliding drops in the diffuse interface model coupled to hydrodynamics", *Phys. Rev. E* **64**, 061601-1-12 (with U. Thiele, K. Neuffer, M. Bestehorn, & Y. Pomeau).
-
113. 2001 "Modelling cerebellar dynamics", in Emergent Nature. Patterns, Growth and Scaling in the Sciences, M. M. Novak (editor), World Scientific, London, pp. 1-19 (with V. Makarov & R. Llinas) [Invited].
 114. 2001 "Interfacial Patterns and Waves", in Physics of Fluids in Microgravity, R. Monti (editor), Taylor & Francis, London, pp. 126-148 (with A. A. Nepomnyashchy) [Invited].
 115. 2001 "Achievements and prospects of research in physical sciences in space", in Procs. First International Symposium on Microgravity Research & Applications in Physical Sciences & Biotechnology, ESA SP-454, pp. 27-28. [Invited].
 116. 2001 "Experimental studies of Marangoni convection in thin liquid layers caused by soluble surfactant", in Procs. First International Symposium on Microgravity Research & Applications in Physical Sciences & Biotechnology,

ESA SP-454, pp. 207-214 (with A. L. Zuev, V. A. Briskman, J.-C. Legros & A. Viviani).

117. 2001 "Coherent structures (dissipative solitons) in nonlinear systems with dissipation", in Proceedings Dynamic Systems and Applications, vol. 3, G. S. Ladde, N. G. Medhin & M. Sambandham (editors), Dynamic Publishers, Atlanta, pp. 155-162 (with C. I. Christov) [Invited].

110. 2001 "En estos tiempos de internet", *Rev. Esp. Física*, **15** (2), 2-5.
111. 2001 "Hoy por ti, mañana por mí: la solidaridad egoísta, o egoísmo racional", *RACE-Autoclub* nº 90, 32 (Rep.: in Antología del Humorismo Mundial, 2003-2004; Biblioteca de "La Golondrina", La Academia de Humor, Pozuelo, Madrid, pp. 30-33, 2004).

2002

237. 2002 "Modelling inferior olive neuron dynamics", *Neural Networks* **15**, 5-10 (with V. I. Nekorkin, V. B. Kazantsev, V. I. Makarenko & R. Llinas).
238. 2002 "Strain kinks in an elastic rod embedded in a viscoelastic medium", *Wave Motion* **35**, 189-204 (with A. V. Porubov).
239. 2002 "Sliding drops on an inclined plane", *Colloids & Surfaces A* **206**, 87-104 (with U. Thiele, K. Neuffer, M. Bestehorn & Y. Pomeau).
240. 2002 "On the importance of nucleation solutions for the rupture of thin liquid films", *Colloids and Surfaces A* **206**, 135-155 (with U. Thiele, K. Neuffer & Y. Pomeau).
241. 2002 "Capillary-gravity solitons in a liquid layer", *J. Fluid Mech.* **466**, 1-15 (with G.-X. Huang).
242. 2002 "Electric field effects on the stability of a thermogravitational flow in a vertical capacitor", *J. Electrostat.* **56**, 493-513 (with S. R. Kosvintsev, I. Yu. Makarikhin & S. A. Zhdanov).
243. 2002 "Spreading of liquid drops over saturated porous layers", *J. Colloid Interface Sci.* **246**, 372-379 (with V. M. Starov, S. R. Kosvintsev, V. D. Sobolev & S. A. Zhdanov).
244. 2002 "Spreading of liquid drops over dry porous layers: Complete wetting case", *J. Colloid Interface Sci.* **252**, 397-408 (with V. M. Starov, S. R. Kosvintsev, V. D. Sobolev & S. A. Zhdanov).
245. 2002 "Spreading of liquid drops over thick porous layers: Complete wetting case", *Langmuir* **18**, 9744-9750 (with V. M. Starov & S. A. Zhdanov).
246. 2002 "Internal tides in the Strait of Gibraltar", *J. Phys. Oceanography* **32**, 3193-3206 (with E. G. Morozov, K. Trulsen & V. I. Vlasenko).
247. 2002 "Oscillatory phenomena and stability of periodic solutions in a simple neural network with delay", *Nonlinear Phenomena in Complex Systems* **5**, 407-417 (with J.-J. Wei & V. A. Makarov).

118. 2002 "Dissipative effects on the evolution of internal solitary waves in a sheared, stably stratified fluid layer", in Selected Topics in Nonlinear Wave Mechanics, C. I. Christov & A. Guran (editors), Birkhauser, Cambridge, MA, pp. 203-222 (with W. B. Zimmerman) [Invited].
119. 2002 "Wave Motion in Thin Liquid Layers", in Encyclopedia of Surface and Colloid Science, A. Hubbard (editor), M. Dekker, N. Y., pp. 5616-5629 (with M. Vignes-Adler) [Invited].

120. 2002 "Benard layers with heat or mass transfer", in Interfacial Phenomena and the Marangoni Effect, M. G. Velarde & R. Kh. Zeytounian (editors), Springer-Verlag-CISM, Wien & Udine, pp. 89-121.

112. 2002 "Autoorganizacio fluidodinamica: Una aproximacio quasi exclusivament estetica", *Metode (Rev. Univ. Valencia)* **35**, 51-54.
113. 2002 "Autoorganizacion intai fluits", *Gjornal Furlan des Siencis* **2**, 129-138.
114. 2002 "Vudu", *Estudios Africanos* (A. E. A.), XVI, N. 29-30, 219-223 (Rep.: *Platea. Revista Cultural* N. 8, 6-9, 2003).

2003

248. 2003 "Two-dimensional solitons in Bose-Einstein condensates with a disk-shaped trap", *Phys. Rev. A* **67**, 023604-1-12 (with G.-X. Huang & V. A. Makarov).
249. 2003 "Mode transitions and wave propagation in a driven-dissipative Toda-Rayleigh ring", *Phys. Rev. E* **67**, 056208-1-9 (with E. del Rio, V. A. Makarov & W. Ebeling).
250. 2003 "Momentum transport at a fluid-porous interface", *Int. J. Heat Mass Transfer* **46**, 4071-4081 (with B. Goyeau, D. Lhuillier & D. Gobin).
251. 2003 "Spreading of non-Newtonian liquids over solid substrates", *J. Colloid Interface Sci.* **257**, 284-290 (with V. M. Starov, A. N. Tyatyushkin & S. A. Zhdanov).
252. 2003 "Spreading of liquid drops over porous substrates", *Adv. Colloid Interface Sci.* **104**, 123-158 (with V. M. Starov, S. A. Zhdanov, S. R. Kosvintsev & V. D. Sobolev).
253. 2003 "Spreading of aqueous SDS solutions over nitrocellulose membranes", *J. Colloid Interface Sci.* **264**, 481-489 (with S. A. Zhdanov, V. M. Starov & V. D. Sobolev).
254. 2003 "The Straits of Gibraltar and Kara Gates: A Comparison of Internal Tides", *Oceanologica Acta* **26**, 231-241 (with E. G. Morozov, G. Parrilla-Barrera & A. D. Scherbinin).
255. 2003 "Thermocapillary instability and wave formation on a film falling down a uniformly heated plane", *J. Fluid Mech.* **492**, 303-338 (with S. Kalliadasis, E. A. Demekhin & C. Ruyer-Quil).
256. 2003 "On the accuracy of measuring small contact angles by the sessile drop method", *Kolloid Zh.* **65**, 668-671 (with V. D. Sobolev & V. M. Starov) [in Russian]; English translation: *Colloid J.* **65**, 611-614.
257. 2003 "Stability of a falling liquid film with a non-equilibrium adsorbed sublayer of soluble surfactant", *Izv. Ross. Akad. Nauk, Mekh. Zhidk. Gaza* N. **5**, 20-35 (2003) (with V. Ya. Shkadov & V. P. Shkadova) [in Russian]; English translation: *Fluid Dynamics* **38** (5), 679-691.

121. 2003 "Surface Waves and Dissipative Solitons Sustained by the Marangoni Effect", in Handbook of Surface and Colloid Chemistry, 2nd Ed., CRC Press, Boca Raton, pp. 119-135 (with M. Vignes-Adler) [Invited].
122. 2003 "Experimental study of a noisy dissipative-driven ring lattice with Morse interactions", in Noise in Complex Systems and Stochastic Dynamics (Proceedings of SPIE, vol. 5114), L. Schimansky-Geier, D. Abbott, A. Neiman &

C. Van den Broeck (editors), SPIE, Bellingham, pp. 318-326 (with E. del Rio, V. A. Makarov & W. Ebeling).

115. 2003 "Ciencia e investigacion cientifica", in Los metodos y el progreso de la Ciencia, C. Santisteban (director), UNED Ediciones, Aula Abierta, Madrid, pp. 75-80 [Invited].
116. 2003 "Des structures dissipatives au chaos en physique des fluides", *Chimie Nouvelle* n° 84, 150-153 (with J. C. Legros, J. K. Platten & P. Colinet).
117. 2003 "De entre los fluidos", *Mas que ciencia (DuPont)* **12**, 8 (Rep.: *La Nueva Espana*, p. 41, 22-01-2004; Rep.: *El Pais*, p. 32, 4-02-2004)

2004

258. 2004 "Analogies between colored Levy noise and random channel approach to disordered kinetics", *J. Math. Phys.* **45**, 736-760 (with M. O. Vlad & J. Ross).
259. 2004 "Clustering behavior in a three-layer system mimicking olivo-cerebellar dynamics", *Neural Networks* **17**, 191-203 (with V. I. Nekorkin, V. A. Makarov, V. I. Makarenko & R. Llinas).
260. 2004 "Solitons as dissipative structures", *Int. J. Quantum Chem.* Special issue **98**, 272-280.
261. 2004 "Capillary imbibition of surfactant solutions in porous media and thin capillaries: partial wetting case", *J. Colloid Interface Sci.* **273**, 589-595 (with V. M. Starov & S. A. Zhdanov).
262. 2004 "Falling films and the Marangoni effect", *Phys. Rev. E* **69**, 056310-1-15 (with V. Ya. Shkadov & V. P. Shkadova).
263. 2004 "On the back-firing instability", *Chaos* **14**, 777-783 (with M. Argentina & O. Rudzick).
264. 2004 "Bifurcation analysis and existence of periodic solutions in a simple neural network with delays", *Chaos* **14**, 940-953 (with J. J. Wei).

123. 2004 "Universal and not so universal laws governing spreading phenomena", in Simplicity, Rigor and Relevance in Fluid Mechanics (A volume in honor of Amable Linan), F. J. Higuera, J. Jimenez & J. M. Vega (editors), CIMNE, Barcelona, pp. 300-315 (with V. M. Starov) [Invited].
124. 2004 "Cierto, necesitamos la mecanica cuantica, pero...", in Encuentro de Fisica Fundamental "Alberto Galindo", R. F. Alvarez-Estrada, A. Dobado, L. A. Fernandez, M. A. Martin-Delgado & A. Munoz Sudupe (editors), UCM-Fundacion BBVA, Madrid, pp. 477-484.

118. 2004. "Algunas cuestiones de fisica de fluidos", *Rev. Esp. Fisica* **18** (1), 21-25.
119. 2004. "Ilya Prigogine and the classical thermodynamics of irreversible processes", *J. Non-Equilib. Thermodyn.* **29**, 1-8 (with A. Sanfeld).
120. 2004. "Pensar por cuenta propia", *Mas que ciencia (DuPont)* **16**, 5.

2005

265. 2005 "On the possibility of electric conduction mediated by dissipative solitons", *Int. J. Bifurcation Chaos* **15**, 245-251 (with W. Ebeling & A. P. Chetverikov).
266. 2005 "Thermodynamics and phase transitions in dissipative and active Morse chains", *Eur. Phys. J. B* **44**, 509-519 (with A. P. Chetverikov & W. Ebeling).

267. 2005 "Nonlinear ionic excitations, dynamic bound states, and nonlinear currents in a one-dimensional plasma", *Contrib. Plasma Phys.* **45**, 275-283 (with A. P. Chetverikov & W. Ebeling).
268. 2005 "On the various wave motions observed at a liquid interface due to Marangoni stresses and instability", *Industrial Eng. Chem. Res.* **44**, 1396-1412 (with H. Linde, W. Waldhelm, K. Loeschcke & A. Wierschem).
269. 2005 "Asymptotic study of Rayleigh-Benard Convection under time periodic heating in Hele-Shaw cell", *Physica Scripta* **71**, 395-401 (with S. Aniss, M. Belhaq & M. Souhar).
270. 2005 "Thermocapillary long waves in a liquid film flow. Part 1. Low-dimensional formulation", *J. Fluid Mech.* **538**, 199-222 (with C. Ruyer-Quil, B. Scheid, S. Kalliadasis & R. Kh. Zeytounian).
271. 2005 "Thermocapillary long waves in a liquid film flow. Part 2. Linear stability and nonlinear waves", *J. Fluid Mech.* **538**, 223-244 (with B. Scheid, C. Ruyer-Quil, S. Kalliadasis & R. Kh. Zeytounian).
272. 2005 "Currents and internal waves in the straits", *Izvestia Akad. Eng. Sciences (Russia)* **13**, 43-47 (with E. G. Morozov).

-
125. 2005 "Dynamical clustering in chains of atoms with exponential repulsion", in Nucleation Theory and Applications, J. W. P. Schmelzer, G. Röpke & V. B. Priezhev (editors), JINR, Dubna, pp. 62-81 (with A. P. Chetverikov & W. Ebeling).
 126. 2005 "A form of active Brownian motor on a (nonlinear) Toda lattice", in Noise and Fluctuations, T. Gonzalez, J. Mateos & D. Pardo (editors), AIP, N.Y., pp. 21-24 (with E. del Rio & W. Ebeling).

-
121. 2005 "Estado actual de algunos problemas de fisica de fluidos", in El estado actual de España, Real Academia de Doctores-Borealia, Madrid, pp. 551-564 [Invited].

2006

273. 2006 "On soliton-mediated fast electric conduction in a nonlinear lattice with Morse interactions", *Int. J. Bifurcation Chaos* **16**, 1035-1039 (with W. Ebeling, D. Hennig & Ch. Neissner).
274. 2006 "Dissipative solitons and complex currents in active lattices", *Int. J. Bifurcation Chaos* **16**, 1613-1632 (with A. P. Chetverikov & W. Ebeling).
275. 2006 "Effect of anharmonicity on charge transport in hydrogen-bonded systems", *Phys. Rev. B* **73**, 024306-1-10 (with D. Hennig, Ch. Neissner & W. Ebeling).
276. 2006 "Nonlinear excitations and electric transport in dissipative Morse-Toda lattices", *Eur. Phys. J. B* **51**, 87-99 (with A. P. Chetverikov & W. Ebeling).
277. 2006 "Anharmonicity and its significance to non-Ohmic electric conduction", *Phys. Rev. E* **73**, 066626-1-12 (with V. A. Makarov, A. P. Chetverikov & W. Ebeling).
278. 2006 "Solitons and clusters in one-dimensional ensembles of interacting Brownian particles", *Izvestiya Saratovskogo Univ. Ser. Physica* **6** (1/2), 28-41 (with A. P. Chetverikov & W. Ebeling) (in Russian).

279. 2006 "Spreading dynamics: a succinct account of some basic questions", *Microg. Sci. Tech.* **XVIII-3/4**, 21-24 (with V. M. Starov).
280. 2006 "Spreading of liquid drops from a liquid source", *Colloids & Surfaces A* **282-283**, 247-255 (with R. Holdich, V. M. Starov, P. Prokopovich, D. O. Njobuenwu, R. G. Rubio & S. Zhdanov).
281. 2006 "Suppressing falling film instabilities by Marangoni forces", *Phys. Fluids* **18**, 042111-1-16 (with E. A. Demekhin & S. Kalliadasis).
282. 2006 "Central pattern generator incorporating the actuator dynamics for a hexapod robot", *Trans. Engn., Computing Tech.* **15**, 19-24 (with V. A. Makarov, E. del Rio, M. G. Bedia & W. Ebeling) [Reprinted in *Int. J. Applied Maths. Computer Sci.* **3**, 97-102 (2007)].
283. 2006 "Simple agents benefit only from simple brains", *Trans. Engn., Computing Tech.* **15**, 25-30 (with V. A. Makarov & N. P. Castellanos) [Reprinted in *Int. J. Applied Maths. Computer Sci.* **3**, 103-108 (2007)].

-
127. 2006 "Benard layers, overstability and waves", in Dynamics of Spatio-Temporal Cellular Structures-Henri Benard Centenary Review, Springer, N.Y., Springer Tracts in Modern Physics **207**, 129-145 [Invited].
 128. 2006 "Patterns and dissipative waves, including solitons, in lattices and at interfaces", in Frontiers of Fundamental Physics (Udine, 2004), B. G. Sidharth, F. Honsell & A. de Angelis (editors), Springer, Dordrecht, pp. 343-354 [Invited].

-
122. 2006 "Sobre Boltzmann, de la primera parte de su vida y algo mas", *Rev. Esp. Fisica* **20** (4), 5-7 (with W. Ebeling) [invited].

2007

284. 2007 "Dissipative solitons, wave asymmetry and dynamical ratchets", *Physica A* **377**, 435-447 (with E. del Rio y W. Ebeling).
 285. 2007 "Polymer monolayers with a small viscoelastic linear regime: Equilibrium and rheology of poly (octadecyl acrylate) and poly (vinyl stearate)", *J. Chem. Phys.* **126**, 124904 -1-10 (with H. Hilles, A. Maestro, F. Monroy, F. Ortega & R. G. Rubio).
 286. 2007 "Anharmonic excitations, time correlations and electric conductivity", *Contrib. Plasma Phys.* **47**, 465-478 (with A. P. Chetverikov, W. Ebeling & G. Röpke).
 287. 2007 "Surface rheology, equilibrium and dynamic features at interfaces, with emphasis on efficient tools for probing polymer dynamics at interfaces", *Adv. Colloid Interface Sci.* **134-135**, 175-189 (with F. Monroy, F. Ortega & R. G. Rubio).
 288. 2007 "Electron capture and transport mediated by lattice solitons", *Phys. Rev. E* **76**, 046602-1-9 (with D. Hennig, A. P. Chetverikov & W. Ebeling).
-
129. 2007 "Anharmonicity, neural-like lattices, and fast signal/electric transmission", in Cooperative Behavior in Neural Systems, P. L. Garrido, J. Marro & J. J. Torres (editors), American Institute of Physics, N. Y., pp. 190-216 [Invited].
 130. 2007 "Sensory-motor neural loop discovering statistical dependences among imperfect sensory perception and motor response", in Bioengineered and

Bioinspired Systems III (Proceedings of SPIE, vol. 6592), P. Arena, A. Rodriguez-Vazquez & G. Liñan-Cembrano (editors), SPIE, Bellingham, 65920I, 10 pp. (with N. P. Castellanos, V. A. Makarov, L. Patane) [Invited].

-
123. 2007 "Solitones disipativos, su asimetria y su uso como trinquetes de un motor Browniano autonomo", *Rev. Esp. Fisica* **21** (1), 16-24 (with E. del Rio & W. Ebeling).
 124. 2007 "Straits and Oceans. A Tale of Salt and Waves", *Boletin Real Sociedad Geografica* (Madrid) **CXLIII**, 217-239 (with E. G. Morozov) [invited].
 125. 2007 "Honorary note. V. M. Starov", *Adv. Colloid Interface Sci.* **134-135 C**, 1-2.
 126. 2007 "Apuntes personales sobre la Fisica en la Universidad Automoma de Madrid (1971-1981)", *Rev. Esp. Fisica* **21** (3), 64-65.

2008

289. 2008 "Electron trapping by solitons. Classical versus quantum mechanical approach", *Int. J. Bifurcation Chaos* **18**, 521-526 (with W. Ebeling, A. P. Chetverikov & D. Hennig).
290. 2008 "Soliton-mediated electron pairing", *Int. J. Bifurcation Chaos* **18**, 885-890 (with C. Neissner).
291. 2008 "Thermal solitons and solelectrons in 1D anharmonic lattices up to physiological temperatures", *Int. J. Bifurcation Chaos* **18**, 3815-3823 (with W. Ebeling & A. P. Chetverikov).
292. 2008 "Compounds of paired-electrons lattice solitons moving with supersonic velocity" *Phys. Rev. E* **78**, 066606-1-9 (with D. Hennig, W. Ebeling & A. P. Chetverikov).
293. 2008 "Elements for a general memory structure: properties of recurrent neural networks used to form situation models", *Biol. Cybern.* **98**, 371-395 (with V. A. Makarov, Y. Song, D. Hübner & H. Cruse).
294. 2008 "Convective instability of an Ohmic liquid layer in an unsteady thermal field", *Phys. Fluids* **20**, 044101-1-9 (with B. L. Smorodin).
295. 2008 "Internal oscillations as deep ocean response to hurricanes", *J. Oceanography* **64**, 495-509 (with E. G. Morozov).
296. 2008 "Read before discussing the wetting power of a liquid and using the contact angle", *ELGRA News Letter* **n. 6**, 9-10.

-
131. 2008 "Solitons in viscous flows", in Dissipative Solitons: from Optics to Biology and Medicine (Lecture Notes in Physics, vol. 751), N. Akhmediev & A. Ankiewicz (editors), Springer-Verlag, Berlin, pp. 29-49 (with A. A. Nepomnyashchy) [Invited].
 132. 2008 "Anharmonic Oscillations, Dissipative Solitons and Non-Ohmic Supersonic Electric Transport", in Dissipative Solitons: from Optics to Biology and Medicine, (Lecture Notes in Physics, vol. 751), N. Akhmediev & A. Ankiewicz (editors), Springer-Verlag, Berlin, pp. 321-335 (with W. Ebeling & A. P. Chetverikov) [Invited].
 133. 2008 "Surface Waves and Dissipative Solitons Sustained by the Marangoni Effect" (up-dated augmented contribution relative to previous edition), in Handbook of Surface and Colloid Chemistry, 3rd Ed., CRC Press, Boca Raton, pp. 91-106 (with M. Vignes-Adler) [Invited].
-

127. 2008 "Esculturas disipativas", *Investigación y Ciencia* **378**, 9-11 (with H. Linde & G. Linde).
128. 2008 "Sistemas dinámicos y robots", *Verano Complutense*, IV, n. 136, 8 (with P. Arena).
129. 2008 "Quimiotaxis, infotaxis y memotaxis: estrategias de exploración y supervivencia", *Rev. Esp. Física* **22** (3) 38-42 (with N. P. Castellanos, D. Lombardo, V. A. Makarov & P. Arena).
130. 2008 "De la célula al átomo y del átomo a la célula", *Revista Casino de Madrid*, n. 54, 32-33.

2009

297. 2009 "Surface forces and wetting phenomena", *J. Phys. Cond. Matter* **21**, 464121-1-11 (with V. M. Starov).
298. 2009 "Stability analysis of film flow along a heated porous wall", *Phys. Fluids* **21**, 014103-1-16 (with U. Thiele & B. Goyeau).
299. 2009 "Local electron distributions and diffusion in anharmonic lattices mediated by thermally excited solitons", *Eur. Phys. J. B* **70**, 217-227 (with A. P. Chetverikov & W. Ebeling).
300. 2009 "Electron dynamics in tight-binding approximation - the influence of thermal anharmonic lattice excitations", *Contrib. Plasma Phys.* **49**, 529-535 (with A. P. Chetverikov & W. Ebeling).
301. 2009 "Bound states of electrons with soliton-like excitations in thermal systems – adiabatic approximations", *Condensed Matter Phys.* **12**, 633-645 (with W. Ebeling & A. P. Chetverikov).
302. 2009 "Stability switches, oscillatory multistability, and spatio-temporal patterns of nonlinear oscillations in recurrently delay coupled neural networks", *Biol. Cybern.* **101**, 147-167 (with Y. L. Song & V. A. Makarov).
303. 2009 "The winnerless competition paradigm in cellular nonlinear networks: Models and applications", *Int. J. Circuit Theory Appl.* **37**, 505-528 (with P. Arena, L. Fortuna, D. Lombardo & L. Patane).

-
134. 2009 "Mathematical approach to sensory motor control and memory", in Spatial Temporal Patterns for Action Oriented Perception in Roving Robots, P. Arena & L. Patane (editors), Springer-Verlag, Berlin, pp. 219-268 (with V. A. Makarov, N. P. Castellanos, Y. L. Song & D. Lombardo).
 135. 2009 "Anharmonicity and soliton-mediated transport: Thermal solitons, solectrons and electric transport in nonlinear conducting lattices", in Self-Organization of Molecular Systems. From Molecules and Clusters to Nanotubes and Proteins, N. Russo, V. Ya. Antonchenko & E. Kryachko (editors), Springer-Verlag, Berlin, pp. 171-198 (with W. Ebeling, A. P. Chetverikov & D. Hennig) [Invited].

-
131. 2009 "Humectación: Conceptos y cuestiones básicas", *Rev. Esp. Física* **23** (4), 61-74 (with V. M. Starov).
 132. 2009 "Perfección y simetría dan belleza, pero no hay inteligencia sin errores, y sin simetrías rotas no hubiese habido evolución", *Anales RADE* **13**, 237-252.
 133. 2009 "Aspectos mecánico y termodinámico de economía micro-biológica: sistemas y motores pequeños pero complejos y muy eficientes", in Pensar como un economista. Homenaje al Profesor Andrés Fernández Díaz, V. Bote, L. Escot & J. A. Fernández (editors), Delta Publicaciones, Madrid, tomo 1, pp 247-251.

2010

304. 2010 "From *polaron* to *solelectron*: The addition of nonlinear elasticity to quantum mechanics and its possible effect upon electric transport", *J. Computat. Applied Maths.* **233**, 1432-1445.
305. 2010 "Thermal solitons and solelectrons in nonlinear conducting chains", *Int. J. Quantum Chem.* **110**, 46-61 (with A. P. Chetverikov & W. Ebeling).
306. 2010 "On the mathematical modeling of soliton-mediated long-range electron transfer", *Int. J. Bifurcation Chaos* **20**, 185-194 (with A.P. Chetverikov, W. Ebeling, D. Hennig & J. J. Kozak).
307. 2010 "Thermodynamics of the rupture in a Morse lattice", *Eur. Phys. J. B* **75**, 443-450 (with V. N. Likhachev, T. Yu. Astakhova, W. Ebeling & G. A. Vinogradov).
308. 2010 "Compact internal representation of dynamic situations: Neural network implementing the causality principle", *Biol. Cybern.* **103**, 285-297 (with J. A. Villacorta & V. A. Makarov).
309. 2010 "Instantaneous distribution of fluxes in the course of evaporation of sessile liquid droplets: Computer simulations", *Colloids & Surfaces A* **372**, 127-134 (with S. Semenov, V. M. Starov & R. G. Rubio).

-
136. 2010 "Anharmonicity and soliton-mediated electric transport. Is it possible a kind of superconduction at room temperature?" in From Physics to Control through an Emergent View, L. Fortuna, A. Fradkov & M. Frasca (editors), World Scientific, London, pp. 8-13 (with W. Ebeling & A. P. Chetverikov) [Invited].
 137. 2010 "Surface forces and wetting features in drops and capillaries" in Advances in Fluid Mechanics VIII, M. Rahman & C. A. Brebbia (editors), WIT Press, Southampton, pp. 345-356 (with V. M. Starov).
 138. 2010 "Memotaxis: A common orientation strategy in landmark approach and temperature gradient orientation", *J Neurogenetics* **24**, Supp. 1 (Abstract), 23 (with C. Berg, J. A. Villacorta, V. Makarov, P. Arena, L. Patané, P. S. Termini & R. Strauss).

-
134. 2010 "Por qué y cómo mojan los líquidos", *Anales RADE*, **14**, 83-89.

2011

310. 2011 "Numerical evidence of soliton-mediated electron pairing in heated anharmonic crystal lattices", *Int. J. Bifurcation Chaos* **21**, 1595-1600 (with W. Ebeling & A.P. Chetverikov).
311. 2011 "Soliton-like excitations and solelectrons in two-dimensional nonlinear lattices", *Eur. Phys. J. B* **80**, 137-145 (with A. P. Chetverikov & W. Ebeling).
312. 2011 "On the possibility of electric transport mediated by long living intrinsic localized solelectron modes", *Eur. Phys. J. B* **80**, 545-554 (with O. G. Cantu Ros, L. Cruzeiro & W. Ebeling).
313. 2011 "Properties of nano-scale soliton-like excitations in two-dimensional lattice layers", *Physica D* **240**, 1954-1959 (with A. P. Chetverikov & W. Ebeling).
314. 2011 "Localized nonlinear, soliton-like waves in two-dimensional anharmonic lattices", *Wave Motion* **48**, 753-760 (with A. P. Chetverikov & W. Ebeling).

315. 2011 "Hopping transport and stochastic dynamics of electrons in plasma layers", *Contrib. Plasma Phys.* **51**, 814-829 (with A. P. Chetverikov, W. Ebeling & G. Röpke).
316. 2011 "Computer simulations of quasi-steady evaporation of sessile liquid droplets", *Prog. Colloid Polymer Sci.* **138**, 115-120 (with S. Semenov, V. M. Starov & R. G. Rubio).
317. 2011 "A few preliminary remarks, quotations, and some references", *Eur. Phys. J. ST-DD*, **197**, 3-9.
318. 2011 "Droplets evaporation. Problems and solutions", *Eur. Phys. J. ST-DD*, **197**, 265-278 (with S. Semenov, V. M. Starov & R. G. Rubio).
319. 2011 "Evaporation of sessile water droplets: universal behaviour in presence of contact angle hysteresis", *Colloids & Surfaces A* **391**, 135-144 (with S. Semenov, V. M. Starov, R. G. Rubio & H. Agogo).

139. 2011 "Soliton-like Dynamical Clusters in Atomic Layers", in Nucleation Theory and Applications, J. W. Schmelzer, G. Röpke & V. B. Priezhev (editors), JINR Pub., Dubna, pp. 191-200 (with A. P. Chetverikov & W. Ebeling).
140. 2011 "Compact internal representation as a protocognitive scheme for robots in dynamic environments", Nanotechnology, Bioelectronics, Biomedical, and Bioinspired Systems SPIE Conference Procs. 8068, 806801 (DOI 10.1117/12.886924 (with J. A. Villacorta, L. Salas, L. Alba & V. A. Makarov).

2012

320. 2012 "Electron pairing in one-dimensional anharmonic crystal lattices", *Int. J. Quantum Chem.* **112**, 551-565 (with L. Brizhik, A. P. Chetverikov, L. Cruzeiro, W. Ebeling & G. Röpke).
321. 2012 "Quartic lattice interactions, soliton-like excitations and electron pairing in one-dimensional anharmonic crystals", *Int. J. Quantum Chem.* **112**, 2591-2598 (with L. Brizhik, A. P. Chetverikov, L. Cruzeiro, W. Ebeling & G. Röpke).
322. 2012 "Electron pairing and Coulomb repulsion in one-dimensional anharmonic lattices", *Phys. Rev. B* **85**, 245105-1-9 (with L. Brizhik, A. P. Chetverikov, W. Ebeling & G. Röpke).
323. 2012 "Controlling fast electron transfer at the nano-scale by solitonic excitations along crystallographic axes", *Eur. Phys. J. B* **85**, 291-1-8 (with A.P. Chetverikov & W. Ebeling).
324. 2012 "Soliton-mediated compression density waves and charge density in 2d-layers of underdoped cuprate-like lattices", *Comptes Rendues Acad. Sci. (Paris)* **340**, 910-916 (with W. Ebeling & A.P. Chetverikov).
325. 2012 "Evaporation of sessile water droplets in presence of contact angle hysteresis", *Math. Model. Nat. Phenom.* **7**, 82-98 (with S. Semenov, V. M. Starov, R. G. Rubio & H. Agogo).
326. 2012 "Computer simulations of evaporation of pinned sessile droplets: influence of kinetic effects", *Langmuir* **28**, 15203-15211 (with S. Semenov, V. M. Starov & R. G. Rubio). Corrections *Langmuir* **28**, 16724
327. 2012 "Spreading and evaporation of surfactant solution droplets", *Prog. Colloid Polym. Sci.* **139**, 1-6 (with H. Agogo, S. Semenov, F. Ortega, R. G. Rubio & V. M. Starov).

328. 2012 “Evaporation of pinned sessile microdroplets of water: computer simulations”, *Prog. Colloid Polym. Sci.* **139**, 79-84 (with S. Semenov, V. M. Starov & R. G. Rubio).

141. 2012 “Solitonic excitations and control in nonlinear chains and networks” in Instabilities and Control of Excitable networks: from macro-to nano-systems, (Procs. ICENet 2012, Dolgoprudny, Russia), pp. 28-39 (with W. Ebeling & A. P. Chetverikov).

135. 2012 “Premio Nobel de Química 2011. Los cuasicristales”, *Anales RADE* **16**, 77-84.
 136. 2012 “Por qué el petróleo y los aceites pringan” *Revista Fundación Ramón Areces* n. 8, 134-141.

2013

329. 2013 “Nonlinear soliton-like excitations in two-dimensional lattices and charge transport”, *Eur. Phys. J. ST* **222**, 2531-2546 (with A. P. Chetverikov & W. Ebeling).
 330. 2013 “Stabilizing role of lattice anharmonicity in the bisoliton dynamics”, *Ukr. J. Phys.* **58**, 562-572 (with L. Brizhik, A. P. Chetverikov, W. Ebeling & G. Röpke).
 331. 2013 “Electron transport mediated by nonlinear excitations in atomic layers”, *Contrib. Plasma Phys.* **53**, 355-359 (with A. P. Chetverikov, W. Ebeling & G. Röpke).
 332. 2013 “High conductivity mediated by thermal excitation of solectrons”, *Contrib. Plasma Phys.* **53**, 736-743 (with W. Ebeling, A. P. Chetverikov & G. Röpke).
 333. 2013 “Evaporation of droplets of surfactant solutions”, *Langmuir* **29**, 10028-10036 (with S. Semenov, A. Trybala, H. Agogo, N. Kovalchuk, F. Ortega, R. G. Rubio & V. M. Starov).

142. 2013 “Soliton-mediated electron transfer and electric transport arising from coupling electron quantum mechanics to nonlinear elasticity in anharmonic crystal lattices”, in IUTAM Symposium on Nonlinear Dynamics for Advanced Technologies and Engineering Design, M. Wiercigroch & G. Rega (editors), Springer, Dordrecht, pp. 47-62 (with W. Ebeling & A. P. Chetverikov).
 143. 2013 “Observation of the thermocapillary motion of a droplet in a laser beam”, in Without Bounds: A Scientific Canvas of Nonlinearity and Complex Dynamics, R. G. Rubio et al (editors), Springer, Heidelberg, pp. 123-132 (with P. López, Yu. S. Ryazantsev, R. G. Rubio, F. Ortega & J. M. Redondo).
 144. 2013 “Shear rheology of interfaces: micro rheological methods”, in Without Bounds: A Scientific Canvas of Nonlinearity and Complex Dynamics, R. G. Rubio et al (editors), Springer, Heidelberg, pp. 183-198 (with A. J. Mendoza, R. Chuliá-Jordán, F. M. Pedrero, H. Agogó, R. G. Rubio & F. Ortega).
 145. 2013 “Evaporation of sessile droplets of liquid on solid substrates”, in Without Bounds: A Scientific Canvas of Nonlinearity and Complex Dynamics, R. G. Rubio et al (editors), Springer, Heidelberg, pp. 285-300 (with S. Semenov, V. M. Starov & R. G. Rubio).
 146. 2013 “Towards a theory of degenerated solectrons in heavily doped lattices – problems and perspectives”, in Without Bounds: A Scientific Canvas of

Nonlinearity and Complex Dynamics, R. G. Rubio et al (editors), Springer, Heidelberg, pp. 443-466 (with A. P. Chetverikov & W. Ebeling).

147. 2013 “Thermal solitons in 1d- and 2d-anharmonic lattices-Solelectrons and the organization of nonlinear fluctuations in long-living dynamical structures”, in Chaos, CNN, Memristors and Beyond A. Adamatzky & G. Chen (editors), World Scientific, London, pp. 458-465 (with W. Ebeling & A.P. Chetverikov).

137. 2013 “Olas, surfeo y libre transporte”, *Rev. Esp. Física* **27** (3), 24-34.

2014

334. 2014 “On the electron transport in polydiacetylene crystals and derivatives”, *Europhysics Letters-EPL* **106**, 27004-1-6 (with A. P. Chetverikov, W. Ebeling, E. G. Wilson & K. Donovan)
335. 2014 “High electrical conductivity in nonlinear model lattice crystal mediated by thermal excitation of solelectrons”, *Eur. Phys. J. B* **87**, 153-1-13 (with A. P. Chetverikov, W. Ebeling & G. Röpke).
336. 2014 “Head-on and head-off collisions of discrete breathers in two-dimensional anharmonic crystal lattices”, *Eur. Phys. J. B* **87**, 211-1-5 (with A.A. Kistanov, S.V. Dmitriev & A. P. Chetverikov).
337. 2014 “Simultaneous spreading and evaporation: Recent developments”, *Adv. Colloid Interface Sci.* **206**, 382-398 (with S. Semenov, A. Trybala, R. G. Rubio, N. Kovalchuk & V. M. Starov)

148. 2014 “Two-dimensional anharmonic crystal lattices: solitons, solelectrons, and electric conduction”, in Frontiers of Fundamental Physics and Physics Education Research, B. G. Sidarth, M. Michelini & L. Santi (editors), Springer, Heidelberg, pp. 3-13 (with W. Ebeling & A. P. Chetverikov).
149. 2014 “Localized excitations and anisotropic directional ordering in a two-dimensional Morse lattice model of cuprate layers”, in Localized Excitations in Nonlinear Complex Systems. Current State of the Art and Future Perspectives, R. Carretero-González et al (editors), Springer, Berlin, pp. 213-224 (with W. Ebeling & A. P. Chetverikov)
150. 2014 “Variational approximation to electron trapping by soliton-like localized excitations in one-dimensional anharmonic lattices,” in Localized Excitations in Nonlinear Complex Systems. Current State of the Art and Future Perspectives, R. Carretero-González et al (editors), Springer, Berlin, pp. 225-235 (with L. A. Cisneros-Ake & A. A. Minzoni).
151. 2014 “Compact internal representation of dynamic environments: Simple memory structures for complex situations”, in Spatial Temporal Patterns for Action-Oriented Perception in Roving Robots II, P. Arena & L. Patané (editors), Springer-Verlag, Berlin, pp. 83-100 (with J. A. Villacorta-Atienza & V. A. Makarov).
152. 2014 “A prototype 2N-legged (insect-like) robot. A nonlinear dynamical system approach”, in Spatial Temporal Patterns for Action-Oriented Perception in Roving Robots II, P. Arena & L. Patané (editors), Springer-Verlag, Berlin, pp.123-149 (with E. del Río).

153. 2014 “Roving robots gain from an orientation algorithm of fruit flies and predict a fly decision-making algorithm”, in Biomimetic and Biohybrid Systems (Lecture Notes in Artificial Intelligence), A. Duff et al (editors), Springer, Berlin, pp. 433-5 (with R. Strauss, S. Flethe, J. A. Villacorta, V. A. Makarov, L. Patané & P. Arena).

- 138. 2014 “Dos apuntes sobre control mecánico y surfeo de electrones en sólidos cristalinos”, *Rev. Esp. Física* **28** (4), 3-7.

2015

338. 2015 “Interaction dynamics in small networks of nonlinear elements”, *Commun. Nonlinear Sci. Numer. Simulat. -CNSNS* **20**, 807-818 (with M. Stich).
339. 2015 “Discrete breathers in 2D and 3D crystals”, *Physica Status Solidi b* **252**, 1682-6 (with S. V. Dmitriev & A. P. Chetverikov).
340. 2015 “Mobile localized solutions for an electron in lattices with dispersive and non-dispersive phonons”, *Physica D* **306**, 82-93 (with L. A. Cisneros-Ake & L. Cruzeiro).
341. 2015 “On the temperature dependence of fast electron transport in crystal lattices”, *Eur. Phys. J. B* **88**, 202 (with A. P. Chetverikov & W. Ebeling).
342. 2015 “Wave motions along lattices with nonlinear on-site and inter-site potentials. Cooperation and/or competition leading to lattice solitons and/or discrete breathers”, *Procs. Estonian Acad. Sci.* **64**, 3S, 396-404 (with A. P. Chetverikov, W. Ebeling, S. V. Dmitriev, V. D. Lakhno).

- 154. 2015 “On electron transfer and tunneling from donor to acceptor in anharmonic lattices”, in Quodons in mica: nonlinear localized travelling excitations in crystals, J.F.R. Archilla, N. Jiménez, V.J. Sánchez-Morcillo, L.M. García-Raffi (eds.), Springer, pp. 267-289 (with A. P. Chetverikov, L. Cruzeiro & W. Ebeling).
155. 2015 “Bound states of electrons in harmonic and anharmonic lattices with electron-lattice interaction”, in Quodons in mica: nonlinear localized travelling excitations in crystals, J.F.R. Archilla, N. Jiménez, V.J. Sánchez-Morcillo, L.M. García-Raffi (eds.), Springer, pp. 291-319 (with L. S. Brizhik, A. P. Chetverikov, W. Ebeling & G. Ropke).
156. 2015 “Solitons and charge transport in triangular and quadratic lattices”, in Quodons in mica: nonlinear localized travelling excitations in crystals, J.F.R. Archilla, N. Jiménez, V.J. Sánchez-Morcillo, L.M. García-Raffi (eds.), Springer, pp. 321-339 (with A. P. Chetverikov & W. Ebeling).

- 139. 2015 “Control mecánico y nanosurfing de electrones en polímeros conductores”, *Rev. Esp. Física* **29** (3) 4-10

2016

343. 2016 “Nonlinear Dynamics and the nano-mechanical control of electrons in crystalline solids” *Eur. Phys. J. ST* **225**, 921-41
344. 2016 “On the possibility that local mechanical forcing permits directionally controlled long range electron transfer along DNA-like molecular wires with no need of an external electric field”, *Eur. Phys. J. B* **89**, 101-1-10 (with A. P. Chetverikov, W. Ebeling, V. D. Lakhno & A. S. Shigaev)

345. 2016 “Soliton assisted control of source to drain electron transport along natural channels –crystalline axes- in two-dimensional triangular crystal lattices” *Eur. Phys. J. B* **89**, 196-1-6 (with A. P. Chetverikov & W. Ebeling)
346. 2016 “From solitons to discrete breathers”, *Eur. Phys. J. B* **89**, 233-1-10 (with A. P. Chetverikov, W. Ebeling, S. V. Dmitriev, V. D. Lakhno)
347. 2016 “Long-range electron transport donor-acceptor in nonlinear lattices” *Entropy* **18**, 92-1-16 (with A. P. Chetverikov & W. Ebeling)
348. 2016 “Discrete breathers in crystals”, *Uspekhi Fiz. Nauk*, **186**, 471-488 (with S. V. Dmitriev, E. A. Korznikhova and J. A. Baimova) (in Russian) [English translation: *Phys. Uspekhi* **59**, 446-461 (2016)]
349. 2016 “Collisions of quasi-one-dimensional solitons in triangular Morse lattice”, *Letters on Materials* [Письма о материалах] **6**, 82-85 (with A. P. Chetverikov & W. Ebeling)

-
140. 2016 “Control mecánico, nanosurfing y libre transporte de electrones en polímeros puros como polidiacetileno, derivados y similares”, *Rev. Esp. Física* **30** (2) 16-21

2017

350. 2017 Thermo- and soluto-capillarity: Passive and active drops, *Adv. Colloid Interface Sci.* **247**, 52-80 (with Yu. S. Ryazantsev, R. G. Rubio, E. Guzmán, F. Ortega, P. López)
351. 2017 “Breathing subsonic crowdion in Morse lattices”, *Comput. Materials Sci.* **13**, 59-64 (with A. P. Chetverikov, I. A. Shepelev, E. A. Korznikova, A. A. Kistanov, S. V. Dmitirev)
352. 2017 “Highly Enhanced Transport by Supersonic N-Crowdions”, *Phys. Status Solidi RRL*, 1700298 (with S. V. Dmitriev, N. N. Medvedev, A. P. Chetverikov & K. Zhou)
353. 2017 “Excitation of solitons in hexagonal lattices and ways of controlling electron transport”, *Int. J. Dyn. Control* <https://doi.org/10.1007/s40435-017-0383-x> (with A. P. Chetverikov, W. Ebeling & E. Schöll)

-
141. 2017 “Honoray Note VM Starov”, *Colloids & Surfaces A* **521**, 1-2 (with N. M. Kovalchuk & R. Miller)

2018

354. 2018 “Localized lump-soliton-like excitations in triangular Morse lattices”, *Materials Physics & Mechanics* **35**, 16-20 (with A. P. Chetverikov, S. V. Dmitriev, W. Ebeling, E. A. Korznikova)
355. 2018 “Environmentally friendly platforms for encapsulation of an essential oil: Fabrication, characterization and application in pests control”, *Colloids & Surfaces A* **555**, 473-481 (with N. Sanchez-Arribas, E. Guzman, A. Lucia, A. C. Toloza, F. Ortega & R. G. Rubio)
356. 2018 “On the autonomous motion of drops or bubbles” *J. Colloid Interface Sci.* **527**, 180-186 (with Y. S. Ryazantsev, E. Guzman, R. G. Rubio, F. Ortega & J. J. Montoya)

-
157. 2018 “Anharmonicity, soliton-assisted transport and electron surfing, as a generalization of polaron transport with practical consequences”, in Polarons.

- Recent Progress and Perspectives, A. Laref (ed.), Nova Science Publishers, N. Y., pp. 197-221 (with E. G. Wilson)
158. 2018 "Internal tides west of the Iberian Peninsula", in The Ocean in Motion, Circulation, Waves, Polar Oceanography, M. G. Velarde, R. Yu. Tarakanov & A. V. Marchenko (eds.), Springer International, Berlin, pp. 183-192 (with E. G. Morozov)
159. 2018 "On the Mechanical Control of Electrons at the Nanolevel", in NOLTA 2018, p. 514
-
142. 2018 "Honorary Note EG Morozov", in The Ocean in Motion. Circulation, Waves, Polar Oceanography, M. G. Velarde, R. Yu. Tarakanov & A. V. Marchenko (eds.), Springer International, Berlin, pp. 3-6 (with R. Yu. Tarakanov & A. V. Marchenko)
143. 2018 "Gallery: An Ocean scientist and his life at Sea", in The Ocean in Motion. Circulation, Waves, Polar Oceanography, M. G. Velarde, R. Yu. Tarakanov & A. V. Marchenko (eds.), Springer International, Berlin, pp. 7-13 (with R. Yu. Tarakanov & A. V. Marchenko)

2019

357. 2019 "Discrete breather-assisted charge transport along DNA-like molecular wires", *Phys. Rev. E* **xx**, xx (with A. P. Chetverikov, W. Ebeling & V. D. Lakhno)
358. 2019 "Nonlinear excitations and bound states of electrons, holes and solitons in bilayers of triangular lattices", *Eur. Phys. J. B* **92**, 122-1-11 (with A. P. Chetverikov, W. Ebeling & E. Schöll)
359. 2019 "Spreading and evaporation of sessile drops of polyelectrolyte/surfactant mixtures and spontaneous patterning on silicon wafers" (with A. Akanno, L. Perrin, F. Ortega & R. G. Rubio; in preparation)
-
160. 2019 "Drops and Bubbles as reactors and/or carriers including microfluidic aspects", in Structural Nonlinear Dynamics and Diagnosis, M. Belhaq (editor), Springer, Berlin, pp. (to appear) (with Y. S. Ryazantsev, R. G. Rubio, E. Guzman, F. Ortega & A. Fernandez-Barbero)

PATENT

SOLECTRON FIELD EFFECT TRANSISTOR (SFET) AND INVERTER
 UK PATENT APPLICATION TECHNICAL CONTENTS (ref. GB 1421866.3-submitted Dec. 9, 2014; published GB 2533105 A 15-6-2016). Co-inventors: M. G. VELARDE (Spain) and E. G. WILSON (UK).

BOOKS/LIBROS

A. AUTHOR/AUTOR

RESEARCH MONOGRAPHS/LIBROS DE INVESTIGACION

1. 2001. **Nonlinear Dynamics of Surface Tension-Driven Instabilities**, Wiley-VCH, N. Y., 512 pp., ISBN 3-527-40291-8 (with P. Colinet & J. Cl. Legros).
2. 2002. **Interfacial Phenomena and Convection**, Chapman & Hall/CRC, Pitman Series, Boca Raton & London, 365 pp., ISBN 1-5848-8256-5 (with A. A. Nepomnyashchy & P. Colinet).
3. 2002. **Synergetic Phenomena in Active Lattices (Patterns, Waves, Solitons, Chaos)**, Springer-Verlag, Synergetic Series, Berlin, 357 pp., ISBN 3-540-42715-5 (with V. I. Nekorkin).

4. 2003. **Liquid Interfacial Systems. Oscillations and Instability**, M. Dekker, N.Y., Surfactant Science Series, 367 pp., ISBN 0-8247-4295-8 (with R. V. Birikh, V. A. Briskman & J. Cl. Legros).
5. 2007. **Wetting and Spreading Dynamics**, Taylor & Francis/CRC (formerly M. Dekker), N.Y., Surfactant Science Series, 544 pp., ISBN 1-5744-4540-5 (with V. M. Starov & C. Radke). (2019. 2nd Edition, to appear, Taylor & Francis)
6. 2012. **Falling Liquid Films**, Springer-Verlag, London, 440 pp. ISBN 978-1-84882-366-2 (with S. Kalliadasis, C. Ruyer-Quil & B. Scheid).

OTHER BOOKS/OTROS LIBROS

1. 1982. **La Física en España**, CAICYT-MEC, Madrid, 151 pp. (with J. L. de Segovia, E. Bernabeu, A. Fernandez-Rañada, F. Flores & F. Verdaguer).
2. 1977. **Cuestiones de Termodinamica y de Física Estadística**, Monografías Real Academia de Ciencias, Madrid, 73 pp. (with C. Fernandez-Pineda).
3. 1989. **Física para todos (Guía de Lectura, Notas y Cuestionarios)** -serie de L. D. Landau & A. I. Kitaigorodsky- Rubiños, Madrid (vol. 1-300 pp. & vol. 2-289 pp.) (with R. Fernandez & J. L. Hernandez).
4. 1991. **Física y Química - Energía 2, BUP 2**, SM, Madrid (vol. 1-351 pp. & vol. 2-174 pp.) (with A. Arriola, J. del Barrio, A. Cañas, R. Fernandez, J. Hernandez, E. Lowy & N. Romo).
5. 1991. **Física y Química - Energía 3, BUP 3**, SM, Madrid (vol. 1-351 pp. & vol. 2-213 pp.) (with J. del Barrio, R. Calderon, D. Crespo, R. Fernandez, J. Hernandez, M. Laiseca, E. Lowy, N. Romo & L. M. Tel).
6. 1992. **Física: Algunas preguntas, notas y respuestas**, UNED (Colección Aula Abierta), Madrid, 493 pp. (with R. Fernandez & J. L. Hernandez).
7. 2019. **Fluids and Flows with Fun and Fascination**, Springer, Berlin (with R. Narayanan).

B. EDITOR/DIRECTOR/COMPILADOR (and contributor with one or more chapters/y autor de uno o varios capítulos)

1. 1971. **Lectures in Statistical Physics**, Springer-Verlag, Berlin, 181 pp. (with W. C. Schieve & A. P. Grecos).
2. 1974. Translation into Spanish and Appendix/Traducción de I. Prigogine: **Introducción a la Termodinámica de Procesos Irreversibles**, Selecciones Científicas, Madrid, 169 pp. (with A. Soilan).
3. 1977. **Fronteras de la Ciencia (2 vols)**, vol. I: **Bioquímica, Ecología, Informática**, 300 pp, vol. II: **Astrofísica, Materiales, Energética**, 256 pp., Biblioteca Educación Permanente, Serie Aula Abierta, U.N.E.D., Madrid
4. 1984. **Nonequilibrium Cooperative Phenomena in Physics and Related Fields**, Plenum Press, N.Y., 569 pp.
5. 1988. **Synergetics, Order and Chaos**, World Scientific, Singapore, 736 pp.
6. 1988. **Physicochemical Hydrodynamics. Interfacial Phenomena**, Plenum Press, N.Y., 1111 pp.
7. 1992. **Aceite de Oliva. Actas de las Jornadas (Tercer Año Mundial del Olivo) en el Ateneo de Madrid**, Mira, Zaragoza, 153 pp. (with J. Bautista de la Torre & A. Bonilla).

8. 1995. **Fluid Physics** (Proceedings of Summer Schools), World Scientific, Singapore, 597 pp., ISBN 981-02-1899-0 (with C. I. Christov).
9. 1995. **Thermodynamics and Statistical Physics. Teaching Modern Physics**, Proceedings 4th ICPE/IUPAP International Conference, World Scientific, Singapore, 315 pp., ISBN 981-02-2417-6 (with F. Cuadros).
10. 2002. **Interfacial Phenomena and the Marangoni Effect**, CISM-Springer Verlag, Udine & Wien, 283 pp., ISBN 3-211-83696-9 (with R. Kh. Zeytounian).
11. 2007. **Surface Forces: wetting phenomena, membrane separation and rheology**, *Advances in Colloid and Interface Science* vol. 134-135 C (Topical issue in honor of the 60th birthday of Prof. V. M. Starov), Elsevier, 350 pp.
12. 2011. **Wetting and Spreading Science - quo vadis?** *European Physical Journal – Special Topics- Discussion and Debate* vol. 197, Springer-Verlag, 345 pp.
13. 2017. **Dynamics of wetting by surfactant solutions**, *Colloids and Interfaces A. Physicochemical and Engineering Aspects* vol. 521, (Special issue in honor of the 70th birthday of Prof. V. M. Starov) (with N. M. Kovalchuk & R. Miller) Elsevier, 311 pp.
14. 2018. **The Ocean in Motion** (with R. Yu. Tarakanov & A. V. Marchenko) Springer International, Cham, 625 pp

LAB KITS/EQUIPOS DE LABORATORIO (JUNIOR UNIVERSITY YEARS AND SENIOR HIGH SCHOOL YEARS)

1. 1987. **OPTICS WITH A LASER/Equipo de practicas de optica con laser (con guía de usuario)**, Didaciencia-Leybold, Madrid (with R. Fernandez). Ganador del concurso convocado por el MEC.
2. 1988. **OPTICS WITH A LASER/Equipo de prácticas de óptica con laser (con guía de usuario)**, (SECOND UPGRADED EDITION WITH GUIDE FOR TEACHER AND GUIDE FOR STUDENT/nueva versión ampliada sustancialmente con nuevos experimentos y sendas guías de profesor y de alumno), ENOSA, Madrid (with R. Fernández). Winner Spanish Ministry Open Competition/Ganador del concurso convocado por el MEC.

INTERVIEWS & RELATED ACTIONS (RADIO & TELEVISION)

1. 1977. Programa de Televisión (TVE-1) con experimento de la reacción de Belusoff-Zhabotinskii, con motivo del Premio Nobel de QUIMICA a Ilya PRIGOGINE, Noviembre.
2. 1980. RADIO NACIONAL ESPAÑA RNE-1: Asesor científico y autor de varios programas sobre temas científicos (cristales líquidos, etc.) en "La Enciclopedia de la Ignorancia".
3. 1982. TVE-1: Programa de Televisión con tres experimentos sobre transiciones de fase, con motivo del Premio Nobel de FISICA a Kenneth G. WILSON, Diciembre.
4. 1988. TELEVISION GALLEGA: En el programa "O veciño do Xoves", 05.05.1988, interview/entrevista -sazonada con experimentos de física y química- sobre divulgación científica, Mayo.

5. 1987-88. "Revista de Física", 1988-89, 1989-90, 1990-91, 1991-92 y 1992-93. "Cultura Científica", UNED-RNE-3 & RN-1 (a lo largo del curso académico, numerosos programas de media hora sobre diversos temas, con emisiones propias y entrevistas a colegas españoles y extranjeros, generalmente los martes o lunes hacia las diez y media de la noche).
6. 1991. TELEMADRID: 18 Introducciones a las correspondientes 18 películas de la OPEN UNIVERSITY, Abril y Mayo.
7. 1991. Radio ONDA CERO: Entrevistas sobre cuestiones científicas (media hora, varias a lo largo del año).
8. 1993. Four (broad band) video-recorded half-an-hour candid conversations with: J. B. Fenn (Nobel laureate, Yale), Y.-T. Lee (Nobel laureate, UC Berkeley), N. F. Ramsey (Nobel laureate, Harvard), & A. Zewail (Nobel laureate, Caltech).
9. 1993. Cooperación UNED-TV2 (Television Educativa): Complemento semanal a diversos programas durante varios meses.
10. 1993. CANAL PLUS TV: interview/entrevista caos y fractales (PARQUE JURASICO), Septiembre.
11. 1994. Radio France-FRANCE CULTURE: La Science et les Hommes: "Les Vagues", entretien (aprox. 1 heure), 16 Noviembre.
12. 1994. RADIO NACIONAL ESPAÑA RNE-1, Programa "Fiebre del Sábado": "ELGRA Madrid 1994 e Investigación espacial en Microgravedad", interview/entrevista, 10 Diciembre.
13. 1995. TELEMADRID, Programa La Cuestión (con E. Punset): "Una Mirada al Espacio", Tertulia-discusión grupo de expertos, 6 Enero.
14. 2000. Televisión Educativa Iberoamericana: Tertulias sobre Ciencia y Tecnología, Abril.
15. 2003. Realta industriale, "Il CISM si apre all'impresa", Interview/entrevista, 21-22, Febrero.
16. 2003. La clave, "La ciencia no esta integrada en la sociedad", Interview/entrevista, n. 99, 78-81, Marzo
17. 2004. La Nueva España, "Barrer para casa", Interview/entrevista, 10-11, 8 Febrero.
18. 2007. La Nueva España, "La Escuela debería ser menos libresca haciendo más cosas con las manos", Interview/entrevista, 7, 25 Abril.

OTHER ACTIVITIES/OTRAS ACTIVIDADES

1. Director/Presidente Comité Internacional de numerosos congresos y escuelas internacionales de los que, en ocasiones, se han publicado las Actas/Proceedings y, asimismo, ha sido miembro del comité internacional organizador en más de dos centenares.
2. Ha dado casi un millar de conferencias divulgación científica (ilustradas en muchas ocasiones con experiencias de cátedra) a lo largo y ancho de la geografía española y parte del extranjero ("La barraca de la ciencia")/Nearly a thousand lectures delivered for the lay audience, school children, and high school youngsters, etc. all over Spain, and in the USA, Canada, Italy, Portugal and France.

3. 1977-presente. Ha organizado numerosos ciclos de conferencias de divulgación científica (más de una quincena). Particularmente a señalar FRONTERAS DE LA CIENCIA (desde 1977) y AULA ABIERTA-EXPERIENCIAS DE CATEDRA (desde 1993) en ACHNA, en el Centro Cultural de la Villa de Madrid y en el ATENEO de Madrid. En esta última institución, la Fundación de BBV dotó en 1993 y 1994 una cátedra para que desarrollara dicha actividad, recuperando así la tradición existente a finales del siglo pasado y primeras décadas del presente, desarrollada por S. RAMON Y CAJAL, B. CABRERA, J. ECHEGARAY y otros.
4. 1983. **Lección inaugural** del curso académico **1983-84** de la UNED: "Transiciones, sinérgesis y evolución: de la física a la sociología" (publicada por la UNED).
5. 1985 (Octubre). Padrino del Profesor Dr. **Ilya Prigogine**, Catedrático de las Universidades Libre de Bruselas y de Texas en Austin y Premio Nobel de Química de 1977, en su **Doctorado "Honoris Causa"** por la UNED (primero de esta universidad).
6. 1987 (Octubre). Padrino del Profesor Dr. **Hermann Haken**, Catedrático y Director del Instituto de Física Teórica y Sinérgica de la Universidad de Stuttgart, RFA, en su **Doctorado "Honoris Causa"** por la UNED.
7. 1993. **XX ANIVERSARIO UNED/XXth ANNIVERSARY UNED**, Organizador y presentador del Ciclo de Conferencias/LECTURE SERIES **FRONTERAS DE LA CIENCIA**: 1. **P. Day**, Director Royal Institution, Londres; 2. **N. F. Ramsey**, Catedrático Universidad Harvard y Premio Nobel de Física de 1989; 3. **H. Haken**, Catedrático y Director Instituto de Física Teórica y Sinérgica de la Universidad de Stuttgart, RFA; 4. **T. Marco**, Compositor; y 5. **P. G. de Gennes**, Catedrático Collège de France, Director Escuela de Física y Química de la Ciudad de Paris y Premio Nobel de Física de 1991, Mayo.
8. 2008. **Lección inaugural** del curso 2008-2009 de la Real Academia de Doctores de España "Perfección y simetría dan belleza, pero no hay inteligencia sin errores, y sin simetrías rotas no hubiese habido evolución" (publicada en los Anales de la RADE).