

JOAQUÍN MARRO BORAU

Grupo de Investigación: FÍSICA ESTADÍSTICA Y DE LOS SISTEMAS COMPLEJOS (Cod.: FQM165)

Departamento: Universidad de Granada. Electromagnetismo y Física de la Materia

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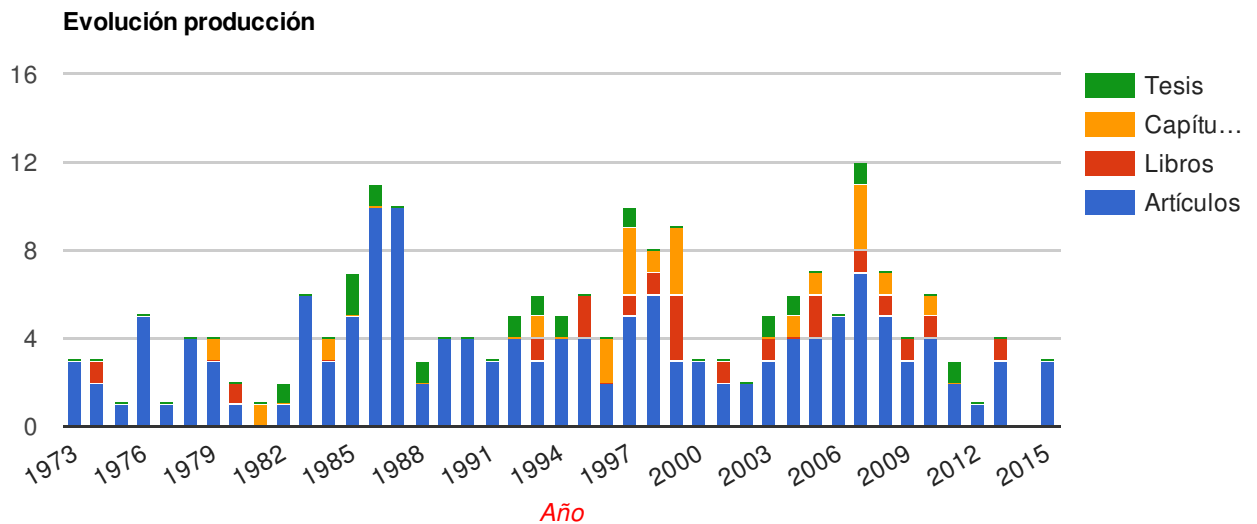
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Ficha del Directorio

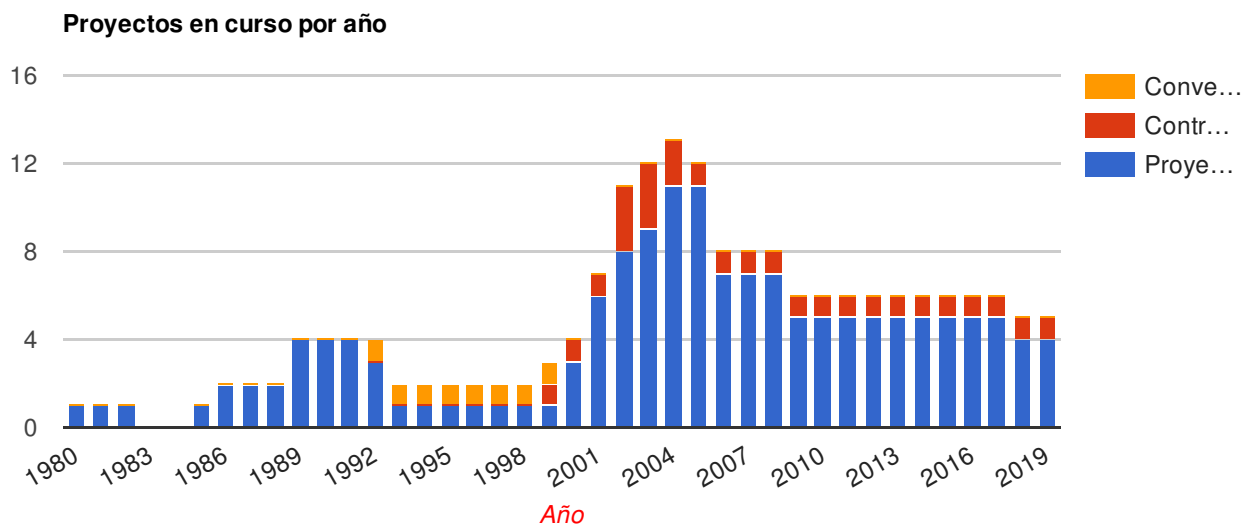
Producción 202

Artículos (150) Libros (19) Capítulos de Libros (20) Tesis dirigidas (13)



Proyectos dirigidos 39

Proyectos (32) Contratos (6) Convenios (1)



Actividades 7

Título publicación	Fuente	Tipo	Fecha
Brain performance versus phase transitions	Scientific reports	Artículo	2015
Efficient transmission of subthreshold signals in complex networks of spiking neurons	Plos one	Artículo	2015
Evolution of brain network structure under a critical condition as induced by local currents	International journal of complex systems in science	Artículo	2015
Physics, computation, and the mind - advances and challenges at interfaces: proceedings of the 12th granada seminar on computational and statistical physics	Aip conference proceedings	Libros	2013
Robust short-term memory without synaptic learning	Plos one	Artículo	2013
Signal transmission competing with noise in model excitable brains	Aip conference proceedings	Artículo	2013
Stochastic multiresonances in complex nets of spiking neurons	International journal of complex systems in science .	Artículo	2013
Stochastic resonance crossovers in complex networks	Plos one	Artículo	2012
Can intrinsic noise induce various resonant peaks?	New journal of physics	Artículo	2011
Interplay between network topology and dynamics in neural systems	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	2011
Why are so many networks disassortative?	Aip conference proceedings	Artículo	2011
Entropic origin of disassortativity in complex networks	Physical review letters	Artículo	2010
Evolving networks and the development of neural systems	Journal of statistical mechanics: theory and experiment	Artículo	2010
Excitable networks: non-equilibrium criticality and optimum topology	International journal of bifurcation and chaos in applied sciences and engineering	Artículo	2010
Nonequilibrium behavior in neural networks: criticality and optimal performance	Advances in cognitive neurodynamics (ii)	Capítulo de libro	2010
Nonequilibrium statistical physics today. where shall we go from here?	American institute of physics	Libros	2010
Unstable dynamics, nonequilibrium phases, and criticality in networked excitable media	Physical review. e, statistical, nonlinear, and soft matter physics	Artículo	2010
Chaos in heterogeneous networks with temporally inert nodes	International journal of bifurcation and chaos in applied sciences and engineering	Artículo	2009
Development of neural network structure with biological mechanisms	Lecture notes in computer science	Artículo	2009
Modeling and simulation of new materials: x granada seminar on computational and statistical physics	American institute of physics	Libros	2009
Nonlinear preferential rewiring in fixed-size networks as a diffusion process	Physical review. e, statistical, nonlinear, and soft matter physics	Artículo	2009
A brief comment on the modeling of flow	Computer physics communications	Artículo	2008
Complex behavior in a network with time-dependent connections and silent nodes	Journal of statistical mechanics: theory and experiment	Artículo	2008
Demagnetization via nucleation of the nonequilibrium metastable phase in a model of disorder	Journal of statistical physics	Artículo	2008
Excitable networks: non-equilibrium criticality and optimum topology	Modelling and computation on complex networks and related topics	Capítulo de libro	2008
Functional optimization in complex excitable networks	Europhysics letters	Artículo	2008
Física y vida	Crítica (grupo planeta)	Libros	2008
Instabilities in attractor networks with fast synaptic fluctuations and partial updating of the neurons activity	Neural networks : the official journal of the international neural network society	Artículo	2008

Attractor neural networks with activity-dependent synapses: the role of synaptic facilitation	Neurocomputing	Articulo	2007
Chaotic hopping between attractors in neural networks.	Neural networks : the official journal of the international neural network society	Articulo	2007
Competition between synaptic depression and facilitation in attractor neural networks	Neural computation	Articulo	2007
Complex networks with time-dependent connections and silent nodes	New trends and tools in complex networks	Capítulo de libro	2007
Cooperative behavior in neural systems	Aip	Libros	2007
Inestabilidades, nucleación y comportamiento crítico en fluidos con arrastre fuera del equilibrio: teoría y simulación	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	2007
Information processing with unstable memories	Aip conference proceedings	Articulo	2007
Lattice versus lennard-jones models with a net particle flow	Traffic and granular flow'05	Capítulo de libro	2007
Modelling neural systems with short-term depression and facilitation	Aip conference proceedings	Articulo	2007
Networks with heterogeneously weighted connections and partial synchronization of nodes	Computer physics communications	Articulo	2007
On the similarities and differences between lattice and off-lattice models of driven fluids	The european physical journal special topics	Articulo	2007
Topology induced instabilities in neural nets with activity-dependent synapses	New trends and tools in complex networks	Capítulo de libro	2007
Effects of fast presynaptic noise in attractor neural networks	Neural computation	Articulo	2006
Metastability, nucleation and noise-enhanced stabilization out of equilibrium	Physical review. e, statistical, nonlinear, and soft matter physics	Articulo	2006
Nonequilibrium anisotropic phases, nucleation, and critical behavior in a driven lennard-jones fluid	Physical review b: covering condensed matter and materials physics	Articulo	2006
Stochastic resonance and scale invariance in nonequilibrium metastable states	European physical journal b. condensed matter and complex systems	Articulo	2006
Understanding scale invariance in a minimal model of complex relaxation phenomena	Journal of statistical mechanics: theory and experiment	Articulo	2006
Algorithms for identification and categorization	Aip conference proceedings	Articulo	2005
Discriminacion, generalizacion y clasificacion mediante automatas neuronales con ruido que induce depression sinaptica	Cedi 2005	Capítulo de libro	2005
Effects of static and dynamic disorder on the performance of neural automata	Biophysical chemistry	Articulo	2005
Instability of attractors in auto-associative networks with bio-inspired fast synaptic noise	Lecture notes in computer science	Articulo	2005
Lennard-jones and lattice models of driven fluids	Physical review. e, statistical, nonlinear, and soft matter physics	Articulo	2005
Modeling cooperative behavior on the social sciences	American institute of physics	Libros	2005
Nonequilibrium phase transitions in lattice models (new paperback edition)	Cambridge university press	Libros	2005
Analysis of the interface in a nonequilibrium two-temperature ising model	Physical review. b, condensed matter	Articulo	2004
Fenómenos cooperativos en autómatas neuronales estocásticos con sinapsis dinámicas	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	2004
Influence of topology on the performance of a neural network	Neurocomputing	Articulo	2004

Reentrant behavior of the spinodal curve in a nonequilibrium ferromagnet	Physical review. e, statistical, nonlinear, and soft matter physics	Artículo	2004
Relaxation of metastable states in a nonequilibrium ideal ferromagnet	Progress in ferromagnetism research	Capítulo de libro	2004
Switching between memories in neural automata with synaptic noise	Neurocomputing	Artículo	2004
Aspectos dinámicos de sistemas fuera del equilibrio: metaestabilidad, avalanchas, separación de fases, estados absorbentes y conducción de calor	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	2003
Coarsening under anisotropic conditions in a lattice gas model	Aip conference proceedings	Artículo	2003
Kinetics of phase separation in the driven lattice gas: self-similar pattern growth under anisotropic nonequilibrium conditions	Physical review. b, condensed matter	Artículo	2003
Metastability and avalanches in a nonequilibrium ferromagnetic system	Aip conference proceedings	Artículo	2003
Modeling of complex systems	American institute of physics	Libros	2003
Growth and scaling in anisotropic spinodal decomposition	Europhysics letters	Artículo	2002
Modeling nonequilibrium phase transitions and critical behavior in complex systems	Computer physics communications	Artículo	2002
Is the particle current a relevant feature in driven lattice gases?	Physical review letters	Artículo	2001
Modelling complex systems	American institute of physics	Libros	2001
Nonequilibrium phase transitions and critical behavior		Artículo	2001
Critical properties of nonequilibrium anisotropic lattice gases	Physica a. statistical mechanics and its applications	Artículo	2000
Metastability and quantum tunneling		Artículo	2000
Monte carlo study of the co-poisoning dynamics in a model for the catalytic oxidation of co	Journal of chemical physics	Artículo	2000
Computer physics communications - europhysics conference on computational physics	North holland press	Libros	1999
Metastability and quantum tunneling	Quantum systems in chemistry and physics, progress in theoretical chemistry, vol.3, p. 43	Capítulo de libro	1999
Modelling collective phenomena in complex systems	European physical society (eps)	Libros	1999
Neural networks in which synaptic patterns fluctuate with time	Journal of statistical physics	Artículo	1999
Neural networks with coherent fluctuations of synapses	Cognitive and neural systems	Capítulo de libro	1999
Nonequilibrium phase transitions in lattice models	Cambridge university press.	Libros	1999
On the effect of synaptic fluctuations during retrieval processes in neural network models	Computer physics communications	Artículo	1999
Quantum tunneling	Progress in theoretical chemistry and physics	Artículo	1999
The effect of synaptic fluctuations in the retrieval process of neural networks	Modelling collective phenomena in complex systems	Capítulo de libro	1999
Anisotropic lattice gases	Journal of statistical physics	Artículo	1998
Demagnetization at low temperature via competing dynamics	Anales de física	Artículo	1998
Effect of correlated fluctuations of synapses in the performance of hopfield's neural network	Anales de física	Artículo	1998

Effect of correlated fluctuations of synapses in the performance of neural networks	Physical review letters	Articulo	1998
Europhysics conference: modelling collective phenomena in complex systems	European physical society (eps)	Libros	1998
Effect of correlated fluctuations of synapses in the performance of hopfield neural network	Anales de física. monografías rsef	Capítulo de libro	1998
Modeling ionic diffusion in magnetic systems	Physical review. b, condensed matter	Articulo	1998
Nonequilibrium neural network with competing dynamics	Physica a. statistical mechanics and its applications	Articulo	1998
A kinetic description of disorder	Lecture notes in physics	Articulo	1997
A kinetic description of disorder	Complex behaviour of glassy systems	Capítulo de libro	1997
Demagnetization of spin systems at low temperature	Physical review. b, condensed matter	Articulo	1997
Física estadística de procesos marcovianos: estudio de redes de neuronas y sistemas afines	Universidad de granada. física aplicada	Tesis doctoral	1997
Fourth granada lectures in computational physics (Inp493)	Springer-verlag	Libros	1997
Magnetic relaxation via competing dynamics	Computational mechanics	Articulo	1997
Magnetic relaxation via competing dynamics	Computational physics	Capítulo de libro	1997
Neural networks with fast time-variation of synapses	Journal of physics a: mathematical and general	Articulo	1997
Neural networks with fluctuating synapses	Lecture notes in physics	Articulo	1997
Neural networks with fluctuating synapses	Computational physics	Capítulo de libro	1997
Complexity and nonequilibrium steady states: an example	The non linearity and the disorder	Capítulo de libro	1996
On the equilibrium and time relaxation of a lattice gas in several boxes	Molecular physics	Articulo	1996
Phase transitions in driven lattice gases	Physical review. e, statistical, nonlinear, and soft matter physics	Articulo	1996
Schematic modeling of superionic conduction	Monte carlo and molecular dynamics of condensed matter systems	Capítulo de libro	1996
25 years of non-equilibrium statistical mechanics	Springer-verlag	Libros	1995
3rd granada lectures in computational physics	Springer-verlag	Libros	1995
Critical and scaling properties of cluster distributions in nonequilibrium ising-like systems	Physical review. e, statistical, nonlinear, and soft matter physics	Articulo	1995
Interacting particle lattice systems - some recent results on nonequilibrium steady-states and phase-transitions	Chaos, solitons & fractals	Articulo	1995
Nonequilibrium layered lattice gases	Journal of physics a: mathematical and general	Articulo	1995
Phase-transitions in a driven lattice-gas in 2 planes	Journal of statistical physics	Articulo	1995
A kinetic anni model	Journal of physics a: mathematical and general	Articulo	1994
Ecuaciones de fokker-planck y teoria de campos fuera del equilibrio	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	1994
Ising systems with conflicting dynamics - exact results for random interactions and fields	Europhysics letters	Articulo	1994
Kinetic lattice models of disorder	Journal of statistical physics	Articulo	1994
Monte-carlo study of a kinetic lattice model with	Physical review. e, statistical, nonlinear,	Articulo	1994

random diffusion of disorder	and soft matter physics	Artículo	1993
Diffusion in a one-dimensional gas of hard point particles	Journal of statistical physics	Artículo	1993
Estudio de cambios de fase en sistemas reticulares quasi-d-dimensionales: equilibrio y estados estacionarios con campos disipativos	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	1993
Li granada lectures in computational physics	World scientific publishing company	Libros	1993
Magnetic system under a fluctuating field	Phase transitions	Artículo	1993
Nonequilibrium ordering and critical phenomena in lattice systems	Computational mechanics	Artículo	1993
Steady states in nonequilibrium lattice systems	Physics computing	Capítulo de libro	1993
Mean-field solution of a nonequilibrium random-exchange ising model system	Physical review. b, condensed matter	Artículo	1992
Non-equilibrium phase transitions in lattice systems with random-field competing kinetics: mean-field theory	Journal of physics: condensed matter	Artículo	1992
Nonequilibrium impure lattice systems	Journal of physics a: mathematical and general	Artículo	1992
Nonequilibrium phase transitions in lattice systems with a random-field competing kinetics	Physical review. b, condensed matter	Artículo	1992
Sistemas reticulares con difusion de desorden: teoria cinetica de campo medio y deduccion de ecuaciones hidrodinamicas	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	1992
A nonequilibrium version of the spin-glass problem	Europhysics letters	Artículo	1991
Fast-ionic-conductor behavior of driven lattice-gas models	Phase transitions	Artículo	1991
Nonequilibrium model of neural network	Lecture notes in computer science	Artículo	1991
Kinetically disordered lattice systems	Lecture notes in physics	Artículo	1990
Monte carlo study of the generalized reaction-diffusion lattice-gas model system	Journal of statistical physics	Artículo	1990
Nonequilibrium stationary states and phase transitions in a driven diffusive lattice system	Annals of physics	Artículo	1990
Stationary distributions for kinetic lattice systs.with competing spin-flip dynamics	Journal of physics a: mathematical and general	Artículo	1990
Critical and finite-size-scaling behaviors of short-ranged order parameters	Journal of physics: condensed matter	Artículo	1989
Effective hamiltonian description of nonequilibrium spin systems	Physical review letters	Artículo	1989
Nonequilibrium ising models with competing, reaction-diffusion dynamics	Physical review a - atomic, molecular, and optical physics	Artículo	1989
One dimensional mixtures of hard points with stochastic boundary conditions	Journal of physics a: mathematical and general	Artículo	1989
Cambios de fase en sistemas reticulares en régimen estacionario fuera del equilibrio	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	1988
Phase transition in ising ferromagnetic lattices with fixed spins	Journal of applied physics	Artículo	1988
Phase transition in the ising ferromagnetic model with fixed spins	Physical review. b, condensed matter	Artículo	1988
Cluster kinetics in the lattice gas: a becker döring type of equations	Journal of physics: condensed matter	Artículo	1987
Critical behavior in nonequilibrium phase transitions	Physical review. b, condensed matter	Artículo	1987

Exactly soluble ising models with anisotropic interactions and arbitrary external magnetic field	Journal of physics a: mathematical and general	Articulo	1987
Integral equations for dense fluids: a priori controllable approximations	Journal of chemical physics	Articulo	1987
Ising models with anisotropic interactions: stationary nonequilibrium states with a nonuniform temperature profile	Physica a. statistical mechanics and its applications	Articulo	1987
Nonequilibrium discontinuous phase transitions in a fast ionic conductor model: co-existence and spinodal lines	Journal of statistical physics	Articulo	1987
Nonequilibrium phase diagram of ising model with competing dynamics	Physical review letters	Articulo	1987
Nonequilibrium second order phase transitions in stochastic lattice systems: a finite size scaling analysis in 2d	Journal of statistical physics	Articulo	1987
Phase transitions and stationary nonequilibrium states	Lecture notes in physics	Articulo	1987
Stationary nonequilibrium states in the ising model with locally competing temperatures	Journal of statistical physics	Articulo	1987
A comment on clusters free energy models	Surface science	Articulo	1986
Critical behavior of ising models with static site dilution	Physical review. b, condensed matter	Articulo	1986
Dynamics of phase separation: cluster kinetics and self similarity properties of the structure function	Physica. b, condensed matter	Articulo	1986
Effective field theory for the magnetic and thermal properties of site and bond impure systems	Journal of physics: condensed matter	Articulo	1986
Microscopic observations on a kinetic ising model	American journal of physics	Articulo	1986
Model studies of the thermal and magnetic properties in disordered systems	Journal of magnetism and magnetic materials	Articulo	1986
Nonequilibrium phase transitions in stochastic lattice systems: influence of the hopping rates	Journal of statistical physics	Articulo	1986
Nucleation theory and the cloud point	Surface science	Articulo	1986
On exact bounds for the clusters free energy in the three dimensional lattice gas model	Physica a. statistical mechanics and its applications	Articulo	1986
Three dimensional ferromagnetic ising model with quenched, random non magnetic impurities	Physica. b, condensed matter	Articulo	1986
Transiciones de fase lejos del equilibrio en modelos reticulares de superconductores iónicos	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	1986
A numerical study of one dimensional systems: kinetics and equilibrium states	Journal of physics: condensed matter	Articulo	1985
Estudio de sistemas ferromagnéticos diluidos	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	1985
Long time tails in the velocity autocorrelation function of hard rod binary mixtures	Physical review letters	Articulo	1985
Nonequilibrium phase transitions in stochastic lattice gases: simulation of a 3d system	Journal of statistical physics	Articulo	1985
Scaling of the excess energy in thermodynamically unstable solutions	Physical review letters	Articulo	1985
Teoría de la nucleación en las proximidades de una transición de fase de primer orden	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	1985
Time evolution of the excess energy in supersaturated solid solutions: microcalorimetric experiments, computer simulations and theory	Journal of physics: condensed matter	Articulo	1985
Apport de la microcalorimétrie aux théories de décomposition de solutions solides sursaturées	Calorimétrie et analyse thermique	Articulo	1984

Kinetics of a first order phase transition: computer simulations and theory	Journal of statistical physics	Articulo	1984
Modified fisher droplet model	Phase transformations in solids	Capítulo de libro	1984
Time evolution of phase separation in binary mixtures	Applied sciences (bucurești)	Articulo	1984
Equilibrium cluster distribution of a three dimensional ising model in the one phase region	Physica a. statistical mechanics and its applications	Articulo	1983
Kinetics of one-dimensional mixture of hard rods with different masses	Journal of statistical physics	Articulo	1983
Kinetics of phase segregation:a review of recent results	Comments on solid state physics	Articulo	1983
On the dynamics of phase segregation in quenched binary alloys	Revista mexicana de física e	Articulo	1983
Relevance of the cahn hilliard cook theory at early times in spinodal decomposition	Physics letters a	Articulo	1983
The interpretation of structure function in quenched binary alloys	Acta metallurgica sinica	Articulo	1983
Dynamical scaling of structure function in quenched binary alloys	Acta metallurgica sinica	Articulo	1982
Evolución dinámica de sistemas de muchos cuerpos: propiedades estocásticas y ergódicas	Universidad de granada. electromagnetismo y física de la materia	Tesis doctoral	1982
Tecnicas monte carlo de simulacion y calculo: un comentario	Libro homenaje prof. r. marqués	Capítulo de libro	1981
Dinamica de transiciones de fase: teoria y simulacion numerica de la evolucion temporal de aleaciones metalicas enfriadas rapidamente	Fundación juan march	Libros	1980
On the 1d kinetic theory of hard rods	Anales de física	Articulo	1980
Computer experiments on phase separation in alloys	Nucleation	Capítulo de libro	1979
Computer experiments on phase separation in alloys	Advances in colloid and interface science	Articulo	1979
Computer simulation of the time evolution of a quenched model alloy in the nuclea-tion region	Physical review letters	Articulo	1979
Mecanica estadística de los procesos irreversibles: iv. ecuacion de boltzmann	Revista de la real academia de ciencias exactas, físicas y naturales de madrid	Articulo	1979
Growth of clusters in a first order phase transition	Journal of statistical physics	Articulo	1978
On the validity of the boltzmann description as a consequence of the exact laws of mechanics	Physics letters a	Articulo	1978
Statistical aproach to the kinetics of nonuniform fluids	Physica a. statistical mechanics and its applications	Articulo	1978
Time displaced correlation functions in an infinite 1d mixture of hard rods with different diameters	Journal of statistical physics	Articulo	1978
Time evolution of a quenched binary alloy: iv. computer simulation of a 3d model system	Physical review. b, condensed matter	Articulo	1977
Computer simulation of a quenched binary alloy: cluster dynamics of a 2d model system	Nuclear physics. a	Articulo	1976
Monte carlo studies of percolation phenomena for simple cubic lattices	Journal of statistical physics	Articulo	1976
Time evolution of a quenched binary alloy: computer simulation of a 3d. model system	Nuclear physics. a	Articulo	1976
Time evolution of a quenched binary alloy: iii. computer simulation of a 2d model system	Physical review. b, condensed matter	Articulo	1976
Universality tests for critical amplitudes in two	Physics letters a	Articulo	1976

dimensional percolation			
Time evolution of a quenched binary alloy: ii. computer simulation of a 3d model system	Physical review. b, condensed matter	Articulo	1975
On the existence of kinetic equations	Il nuovo cimento della società italiana di fisica. d, condensed matter, atomic, molecular and chemical physics, biophysi	Articulo	1974
On the generalization of the boltzmann equation	Il nuovo cimento della società italiana di fisica. d, condensed matter, atomic, molecular and chemical physics, biophysi	Articulo	1974
Transport phenomena	Springer-verlag	Libros	1974
A kinetic equation for dense gases	Physics letters a	Articulo	1973
Mecánica estadística de los procesos irreversibles: absorcion de energia y fluctuaciones	Revista de la real academia de ciencias exactas, físicas y naturales de madrid	Articulo	1973
Mecánica estadística de los procesos irreversibles: movimiento browniano	Revista de la real academia de ciencias exactas, físicas y naturales de madrid	Articulo	1973

	Título proyecto	Tipo	Inicio	Fin
1	Física estadística de los sistemas complejos: de los principios básicos a las fronteras de la física de la materia, ecología y neurociencia	Proyecto	1/1/14	12/31/17
2	Física estadística, teoría y simulación de sistemas complejos, y sus aplicaciones multi-disciplinarias	Proyecto	1/1/10	12/31/13
3	Modelos físico-matemáticos de procesos cooperativos en el cerebro y sus aplicaciones en biología, neurociencia y computación	Proyecto	1/1/07	12/31/09
4	Física estadística de sistemas complejos: teoría y aplicaciones interdisciplinarias	Proyecto	12/31/05	12/31/08
5	Modelos físico-matemáticos de procesos cooperativos en el cerebro y sus aplicaciones en biología, neurociencia y computación	Proyecto	1/1/05	1/1/08
6	Acción hispano-portuguesa 2004-2006 "superficies fuera del equilibrio";	Proyecto	1/1/04	6/30/06
7	Proyecto sobre física estadística de la materia condensada con la universidad de tetuán - agencia española de cooperación	Proyecto	4/20/04	12/31/05
8	Análisis teórico y práctico de autómatas neuronales con ruido sináptico y de sus posibles aplicaciones entidad financiadora:	Proyecto	10/1/01	9/30/05
9	Cecam	Proyecto	7/8/04	7/7/05
10	Granada seminar (modeling cooperative behavior in the social sciences)	Proyecto	9/1/05	6/30/05
11	Acción integrada con italia - 2004	Proyecto	1/1/04	12/31/04
12	Análisis teórico y práctico de autómatas neuronales con ruido sináptico y de sus posibles aplicaciones - 2004	Contrato	1/1/04	12/31/04
13	Fenómenos cooperativos: teoría y aplicaciones interdisciplinarias	Proyecto	12/28/01	11/30/04
14	Aportación española al centro europeo de cálculo atómico y molecular (cecam) - 2003	Proyecto	6/11/03	6/10/04
15	Acción integrada con italia - 2003	Proyecto	1/1/03	12/31/03
16	Análisis teórico y práctico de autómatas neuronales con ruido sináptico y de sus posibles aplicaciones - 2003	Contrato	1/1/03	12/31/03
17	Aplicaciones científico-técnicas del ordenador y modelado de sistemas complejos	Contrato	1/1/02	12/31/03
18	Mecánica estadística de sistemas complejos	Proyecto	1/1/02	12/31/03
19	7º seminario multidisciplinar de granada	Proyecto	6/19/02	6/18/03
20	Granada seminars on computational physics 1998 - 2003	Contrato	1/31/99	2/1/03
21	Acción integrada con italia - 2002	Proyecto	1/1/02	12/31/02
22	Análisis teórico y práctico de autómatas neuronales con ruido sináptico y de sus posibles aplicaciones - 2002	Contrato	1/1/02	12/31/02
23	Tmr programme of the european union, dg xii science, research & development	Proyecto	1/1/01	12/31/02
24	Seminar on computational physics	Proyecto	11/1/98	10/31/02
25	Fenómenos cooperativos en materia condensada	Proyecto	1/1/00	12/31/01
26	Molecular dynamics and monte carlo simulations of quantum and classical systems	Convenio	1/1/92	12/31/99
27	Fenómenos cooperativos en materia condensada	Proyecto	8/1/92	7/31/97
28	Phase transitions in disordered magnetic systems	Proyecto	1/1/89	12/31/92
29	Física estadística	Proyecto	7/1/89	6/30/92
30	Dynamics of systems far from equilibrium";, acción integrada con la universidad de oporto	Proyecto	1/1/90	12/31/91
31	Fomento de la cooperación científica con países de la cee, programa sectorial de promoción general del conocimiento, programa science	Proyecto	1/1/89	12/31/91
32	"estudio de propiedades cooperativas en sistemas físicos";, en colaboración con miembros departamento de física fundamental de la	Proyecto	9/1/86	8/30/89

32	Colaboración con miembros departamento de física fundamental de la universidad de barcelona	Proyecto	9/1/88	9/30/88
33	"kinetics of phase transitions", en colaboración con grupos de las universidades de barcelona, islas baleares, new york, rutgers y temple	Proyecto	1/1/85	12/31/88
34	Contrato con fundación fulbright - comité conjunto hispano norteamericano para la cooperación científica	Proyecto	1/1/80	12/31/82
35	Superficies fuera de equilibrio: depósitos de partículas magnéticas y transiciones de "wetting";	Proyecto	12/31/03	
36	Acción integrada con portugal - 2003	Proyecto	1/1/03	
37	Challenges in molecular simulations: bridging the length and time scales gap, with cecam, lyon.	Proyecto	1/1/00	
38	Ugr - universidad de tetuán (marruecos)	Contrato	1/1/04	
39	Colaboración en física estadística y computacional con la universidad de tetuán	Proyecto	1/1/04	

Actividades 7

Titulo actividad	Fuente	Tipo	Fecha
Participación en: american association for the advancement of science (aaas)	Aaas	Comité científico en sociedad ci	Oct 1, 1988
Participación en: miembro de la academia de ciencias de nueva york (nyas)	Nyas	Comité científico en sociedad ci	Sep 18, 1999
Participación en: unión internacional para la física pura y aplicada (iupap) (iupap)	Iupap	Comité científico en sociedad ci	Apr 28, 1999
Participación en: sociedad europea de física (eps), consejos emsps y de física computacional (eps)	Eps	Comité científico en sociedad ci	Feb 10, 1995
Participación en: real sociedad española de física (gefes y gefenol) (rsef)	Rsef	Comité científico en sociedad ci	Jan 1, 1988
Participación en: american physical society (aps) (aip)	Aip	Comité científico en sociedad ci	Oct 1, 1980
Participación en comité de revista: computer physics communications		Comités científicos de revista	Jan 1, 1997

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