

1. DOCTORAL PROGRAMS

PHYSICS OF COMPLEX SYSTEMS

UNIVERSIDAD DEL PAÍS VASCO-EUSKAL HERRIKO UNIBERTSITATEA

<http://www.sc.ehu.es/jiwdocoj/complex/sc/default.htm>

<http://seneca.fis.ucm.es/sistemas-complejos/>

Since 1996 to 2001. Interrupted in 2001.

With the Quality Mention of the MEC (1996-98)

Participants:

Universidad Carlos III de Madrid

Universidad Nacional de Educación a Distancia

Universidad Complutense de Madrid

Universidad Politécnica de Madrid

Character:

Interdisciplinary (Theory of Systems and Cybernetics)

Departments:

Computational Sciences and Artificial Intelligence, Logic and Science Philosophy, Computer Languages and Systems

Professors in charge:

Bienio 1996-1998 <http://www.sc.ehu.es/jiwdocoj/complex/sc/96-98.htm>

Javier Dolado (LSI), Arantza Etxeberria (LFC) y Javier Torrealdea(CCIA)

Bienio 1997-1999 <http://www.sc.ehu.es/jiwdocoj/complex/sc/97-99.htm>

Alvaro Moreno (L.F.C.) y y Javier Dolado (L.S.I.)

Bienio 1999-2001 <http://www.sc.ehu.es/jiwdocoj/complex/sc/99-01.htm>

Alvaro Moreno (L.F.C.) y Blanca Cases(L.S.I.)

Contact person: Javier Dolado

jiwdocoj@si.ehu.es, dolado@acm.org, dolado@computer.org

<http://www.sc.ehu.es/dolado>

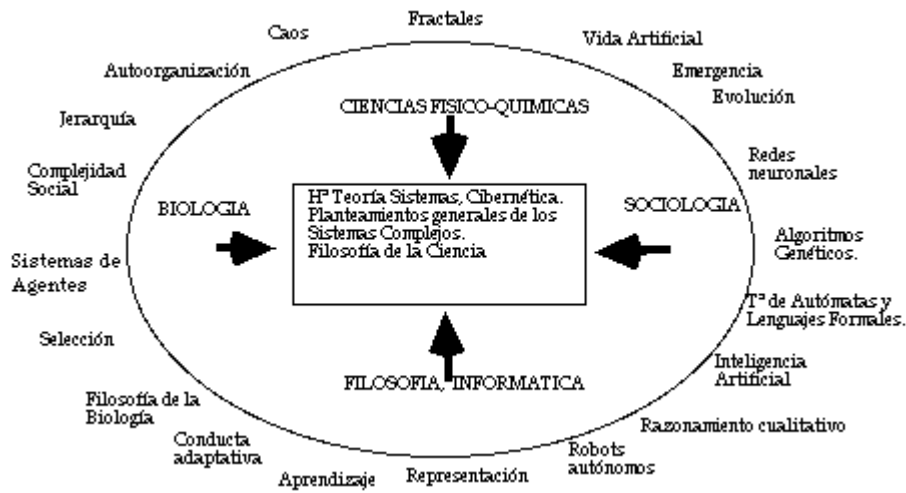
Fax: +0034 - 943 015590 Phone: +0034 - 943 018053

Objectives:

General introduction to Complex Systems problematic in its manifestations: self organization, selection, adaptation, fractals, chaotic systems, neuronal nets, genetic algorithms and artificial life and its applications to different areas offering and integral view about complex systems since Philosophy of the Science and Theory of Systems.

Programs/Research Lines:

Doctoral Titles: Philosophy and Computer Science, Biology, Physical-Chemical Sciences or Sociology and an Advantage Studies Diploma in Complex Systems



Other Courses

**Complex Systems Analysis
Workshop "On the Origins of Cognition"**

2. RESEARCH GROUPS IDENTIFIED WITH THE “COMPLEXITY LABEL”

* IMEDEA

[MEDITERRANEAN INSTITUTE FOR ADVANCED STUDIES \(IMEDEA\)](#) OF THE [UNIVERSITY OF THE BALEARIC ISLANDS \(UIB\)](#) and the [SPANISH NATIONAL RESEARCH COUNCIL \(CSIC\)](#).
<http://www.imedea.uib.es/physdept/esp/lineas.html>

Departments:

Computational Sciences and Artificial Intelligence, Logic and Science Philosophy, Computer Languages and Systems

Professors in charge:

[Maxi San Miguel](#) - DIRECTOR maxi@imedea.uib.es+34 971 173 229

[Raúl Toral](#) raul@imedea.uib.es +34 971 173 235

[Victor M. Equiluz](#) victor@imedea.uib.es +34 971 17 13 73

[Emilio Hernández-García](#) emilio@imedea.uib.es +34 971 17 13 07

[Claudio Mirasso](#) claudio@galiota.uib.es+34 971 172783

[Tomàs Sintès](#) tomas@imedea.uib.es+34 971 17 13 80

[Oreste Piro](#) piro@imedea.uib.es +34 971 173 230

[Salvador Bal. Ie](#) salvador@imedea.uib.es+34 971 611 733 / 738

[Montserrat Casas](#) dfsmca0@uib.es +34 971 173 223

[Pere Colet](#) pere@imedea.uib.es +34 971 17 33 82

[Manuel Matías](#) manuel@imedea.uib.es +34 971 173 383

[Llorenç Serra](#) dfsisc4@uib.es +34 971 172 805

Objectives:

Develop and strategic research from the established practices of physicists, focusing in advanced studies in fields with strong future potential, avoiding incremental research as well as the “basic-applied” polarization. Search in emerging areas beyond the traditional subjects that defined Physics in the twentieth century.

Programs/Research Lines:

Generic Phenomena in Nonlinear Physics and Complex Systems, with strong methodological components from Statistical Physics, Dynamical Systems and Computational Methods. Specific research projects consider a range of different systems, including fluids, optical devices, biological and social systems. Current research lines are:

[Complex systems. Nonlinear and Statistical Physics](#)

[Nonlinear Optics. Quantum Information and Quantum Optics](#)

[Dynamics of optoelectronic devices](#)

[Fluid dynamics and geophysical fluids](#)

[Biophysics and Nonlinear phenomena in Physiology](#)

[Agent based models. Dynamics of social systems.](#)

Other Courses

Cross-Disciplinary Physics Department, Next Announced Seminars

Day and Hour	Title	Speaker
13/10/2004 14:15	NOISE-INDUCED TRANSMISSION OF INFORMATION BY STOCHASTIC RESONANCE IN ELECTRONIC CHUA'S CIRCUIT OPERATING IN CHAOTIC REGIME	Wojciech KORNETA, Faculty of Physics, Technical University, Radom, Poland
09/11/2004 15:00	Synchronization Analysis in Systems with Complicated Topology by means of Recurrence Plots	Prof. Jürgen Kurths, Universität Potsdam

GISC: Grupo Interdisciplinar de Sistemas Complejos

<http://seneca.fis.ucm.es>

<http://valbuena.fis.ucm.es>

<http://www.fisfun.uned.es>

<http://www.icmm.csic.es>

Since 1996

Participants:

Universidad Complutense de Madrid

Grupo interdepartamental de Física Estadística (UCM)

Universidad Nacional de Educación a Distancia

Universidad Carlos III de Madrid

Universidad Pontificia de Comillas (UPCO)

Universidad Politécnica de Madrid (UPM)

Spanish section of the [European Graduate School on Complex Systems](#) in collaboration with the [Department of Physics](#) from the [Universität Bayreuth](#) (Germany). The School offers the possibility of exchange of students and faculty.

The collaboration between Madrid and Bayreuth includes the coordination of the courses on both sides. The following [scheme](#) shows the organization of the courses in four teaching periods.

It has been already approved financial aid to allow every student from Universität Bayreuth to spend at least six months in Madrid, attending courses and/or doing research in collaboration with students and professors from the Spanish Program. Visits of students from the Spanish Program to Universität Bayreuth are also strongly encouraged within this collaboration.

Character: Multidisciplinary

Departments:

Graduate Degree Program, Physics of Complex Systems, Mathematics (UC3M), Applied Physics (UCM), Fundamental Physics (UNED)

Professors in charge:

Ricardo Brito <http://seneca.fis.ucm.es/brito/home.html> (Program Co-ordinator).

Juan M. R. Parrondo <http://seneca.fis.ucm.es/parr/home.html>

Rodolfo Cuerno Rejado <http://gisc.uc3m.es/~cuerno/>

(non linear physics, phase transitions,...)

Angel « Anxo » Sánchez Sánchez <http://gisc.uc3m.es/~anxo/> (Program Co-ordinator)(+34) 91 624 94 11

Miguel Angel Rubio Alvarez (Fluid Physics) mar@fisfun.uned.es(+34) 913987129

<http://www.fisfun.uned.es/~mar/MARUBIO/index.htm>

http://www.fisfun.uned.es/~mar/LSC/pagina_n.htm

J. Enrique Alvarellos (UNED) (Program Co-ordinator).

Enrique Chacón (ICMM, CSIC)

Emilia Crespo (UNED) <http://www.fisfun.uned.es/~emi/emi.html> : (+34) 91 398 7123

emi@fisfun.uned.es

José A. Cuesta (UC3M)

Josep Español (UNED) <http://www.fisfun.uned.es/~pep/pep.html> (+34) 913987133

(Complex Fluids, Simulation methods, Molecular dynamics, Dissipative Particle Dynamics, Smoothed Particle Dynamics, Crack dynamics in brittle solids, Stick-slip dynamics: earthquakes and friction)

Cristobal F. Pineda (UCM)

Javier G. Sanz (UNED)

Elka R. Korutcheva (UNED)

Luis Mederos (ICMM, CSIC)

Juan M. R. Parrondo (UCM)

Javier de la Rubia (UNED)

Angel Sánchez (UC3M)

Ignacio Zúñiga (UNED)

Mario Castro Ponce (UPCO)

Antonio Rodríguez Mesas (UPM)

Objectives:

Prepare researches with skills in traditional and new effective methods of complex systems and their scientific and technological applications does not restrict to basic science but it also affects more applied research: the study and the decoding of human genome, analysis and prediction of the evolution of economic systems (stock markets, macroeconomics variables, etc) and industrial systems (water or electricity consumption), the design and making of new materials (semiconductor industry, plastics and polymers, etc), or the study of meteorology and the global oceanic dynamics, for instance. (Physics, Mathematics, Biology, Chemistry, Engineering, Economy, etc).

Programs/Research Lines:

Instruction Term (20 credits, 12 of *Fundamental Courses*: Certificate valid to complete the PhD in any spanish university) and Research Term, accomplishing several research projects will be presented before a Committee: Degree on Advanced Studies (also valid to complete the PhD in any spanish university). Each one enduring at least one academic year. The student can present in any of the participant departments a project for a PhD Thesis with the approval of his/her advisor, will be defended in this department and obtain the PhD degree by the corresponding university.

[Advanced Equilibrium Statistical Mechanics \(6 credits\)](#)

Physics of Solid Surfaces (6 credits)
Surface Growth Phenomena (6 credits)
Hydrodynamic and Optic Properties of Crystal Liquids (6 credits)
Viscoelasticity of Polymers (6 credits)
Stochastic Processes and Time Series Analysis (3 credits)

Numerical Analysis (6 credits)
Critical Phenomena and Renormalization Group (4 credits)
Computational Statistical Physics (6 credits)

Research Projects:

Stochastic Systems
Foundations of Statistical Mechanics
Phase Transitions
Structure and Dynamics of Fluids
Non Linear Physics
Growth Phenomena and Pattern Formations

Other Courses:

Disordered Systems and Neural Networks
Density Functionals: Electronic Systems
Non Linear Dynamical Systems
Solitons and Non Linear Excitations
Colloidal Suspensions
Kinetic Theory and Hydrodynamic Equations
Non Equilibrium Thermodynamics
Growth models in Thin Layers

**[Physics of Risk II](#). 2nd annual meeting of the ESF COST Action P10 “Physics of Risk”.
Toledo (Spain), April 23-26, 2005.**

[Stochasticity in multi-agent systems \(SMAS\)](#). Sigüenza (Spain), June 2005.

CAB (Centro de Astrobiología)

<http://www.cab.inta.es/>

Spacial Agencies

NASA: www.nasa.gov

ESA: www.esa.int

INTA - Instituto Nacional de Técnica Aeroespacial (Spain): www.inta.es

CNES - Centre National d'Études Spatiales (France): www.cnes.fr

BNSC - British National Space Centre: www.bnsc.gov.uk

ASA - Austrian Space Agency: www.asaspace.at

DSRI - Danish Space Research Institute: www.dsri.dk

DLR - Deutsche Forschungsanstalt für Luft-und-Raumfahrt: www.dlr.de

ASI - Agenzia Spaziale Italiana: www.asi.it

NSC - Norwegian Space Centre: www.spacecentre.no

SSC- Swedish Space Corporation: www.ssc.se

Romanian Space Agency: www.rosa.ro

RSA - Russian Space Agency: liftoff.msfc.nasa.gov/rsa/rsa.html

Russian Space Industry: www.fas.org/spp/civil/russia/

NASDA - National Space Development Agency (Japan): www.nasda.go.jp

CSA - Canadian Space Agency: www.space.gc.ca

CSIRO - Commonwealth Scientific and Industrial Research Organization (Australia): www.csiro.au

CONAE - Comisión Nacional de Actividades Espaciales (Argentina):
www.conae.gov.ar

INPE - Instituto Nacional de Pesquisas Espaciais (Brazil): www.inpe.br

ISRO-Indian Space Research Organisation: www.isro.org

LAEFF - Laboratorio de Astrofísica Espacial y Física Fundamental (Spain):
www.laeff.esa.es

International Space Station Alpha (USA): www.space.gc.ca

Agencia Espacial Europea: www.arianespace.com

CERT - Centre d'Études et de Recherches de Toulouse (France): www.cert.fr

IKI - Space Research Institute (Russia): arc.iki.rssi.ru/Welcome.html

OOSA - United Nations Office for Outer Space Affairs: www.un.or.at/OOSA

ARR - Andoya Rocket Range (Norwegia): www.rocketrange.no

Participants:

Universidad Complutense de Madrid

CSIC-Universidad de Valladolid

Unidad de Microbiología Aplicada

Departments:

Astrobiology

NAI Public Site: nai.arc.nasa.gov

Astrobiology at NASA: astrobiology.arc.nasa.gov

Red española de Astrobiología: astrobionet.rediris.es

Astrobiology Roadmap: astrobiology.arc.nasa.gov/roadmap

Astrobiology at Arizona State University: geology.asu.edu/

Astrobiology at University of California: www.astrobiology.ucla.edu/

Astrobiology at Colorado University: argyre.colorado.edu/life/

Carnegie Mellow University: www.ciw.edu/DTM-index.html
Harvard University: www.oeb.harvard.edu/
Jet Propulsion Laboratory: www.jpl.nasa.gov
Johnson Space Center: www-sn.jsc.nasa.gov/astrobiology/astrobiology.htm
Penn State Astrobiology Research Center: psarc.geosc.psu.edu/
The Scripps Research Laboratory: www.scripps.edu/pub/ghadiri/index.html
Marine Biological Laboratory: evol2.mbl.edu/index.html
NSLORT/Exobiology (NASA Specialized Centre of Research & Training in Exobiology):
exobio.ucsd.edu/
Tulane University Center for Environmental Astrobiology:
www.tmc.tulane.edu/cbr/research/astrobiology.html
The Astrobiology Web: www.astrobiology.com/astro, www.reston.com/astro
Astrobiology and Space Research Directorate: space.arc.nasa.gov
Asteroid and Comet Impact Hazards: impact.arc.nasa.gov
Nasa Astrobiology institute en Español: astrobiologia.astroseti.org

Astrophysics and Astronomy

Observatorio de Astrofísica Espacial y Física Fundamental (LAEFF): www.laeff.esa.es
Observatorio Astronómico Nacional: www.oan.es
Instituto Astrofísico de Canarias: www.iac.es
NRAO Astroweb (links index): fits.cv.nrao.edu/www/astronomy.html
Most visited links for the University of Cantabria Astrophysics Department:
www.gae.unican.es/astro/links.html
www.gae.unican.es/astro/links2.html
The Nine Planets: page dedicated to the solar system:
seds.lpl.arizona.edu/nineplanets/nineplanets/nineplanets.html
European Astronomical Society Homepage: www.iap.fr/eas
American Astronomical Society Homepage: www.aas.org
Astrored: portal de astronomia en español: www.astrored.org
RAL Astrophysics Startlink Node: ast.star.rl.ac.uk
Division of Planetary Sciences of the American Astronomical Society:
www.aas.org/AAS-homepage.html
Stratospheric Observatory for Infrared astronomy: sofia.arc.nasa.gov
NASA Office of Space Science: spacescience.nasa.gov
Mars basic data: www.seds.org/nineplanets/nineplanets/mars.html
US National Optical Astronomy Observatories: www.noao.edu/noao.html
European Southern Observatory: www.hq.eso.org/eso-homepage.html

Biology

Centro de Biología Molecular "Severo Ochoa": www.cbm.uam.es
Instituto de Investigaciones Biomédicas: www.iib.uam.es
European Molecular Biology Network: www.es.embnet.org
NASA Life Sciences Data Archive: lsda.jsc.nasa.gov
American Society for Gravitational and Space Biology: asgsb.indstate.edu/
The Bio-Web: Resources for Molecular and Cell Biologists: cellbiol.com
International Society for Biometeorology: www.es.mq.edu.au/ISB
The Society for Mathematical Biology: www.smb.org
Cell and Molecular Biology Online: biologic resource center: www.cellbio.com
Web Directory: WWW Virtual Library: Cell Biology at Harvard University:
vl.bwh.harvard.edu
Search in the Biology Web Servers: this web searches pages referenced by the
Pasteur Institute Web server: web.pasteur.fr/search/Biology-en.html

Advances in Molecular Ecology - NATO Advanced Study Institute:
www.hull.ac.uk/molecol/natobook.htm

Links to Mathematical Biology sites, maintained by Jason Mattiopoulos:
smub.st-and.ac.uk/jason_mattiopoulos/page5.html
The www Virtual Library of model organisms: www.ceolas.org/fly/models.html
Virtual Department of Biological Anthropology: www.bioanth.org

Biocomputer Science and Biotechnology

Centro Nacional de Biotecnología: www.cnb.uam.es
Nasa Center for Computacional Astrobiology: www.nal.usda.gov/bic
DNAPatent.com web: a guide for DNA patenting for non-lawyers:
www.dnapatent.com
BIOMERIT: from the European network project in biotechnology:
www.ucc.ie/ucc/research/biomerit
Biotechnology Industry Organization: bio.org/welcome.html
European Federation of Biotechnology: www.dechema.de/efb.htm
International Center for Genetic Engineering and Biotechnology(ICGEB):
www.icgeb.trieste.it
Council for Responsible Genetics: www.essential.org/crg
IBM Research: Computational Biology: www.research.ibm.com/topics/serious/bio
Oak Ridge National Laboratory - Computational Biosciences: compbio.ornl.gov
Genetic Information Research Institute: www.girinst.org
Computational Molecular Biology ar US National Institutes of Health:
molbio.info.nih.gov/molbio
European Bioinformatics Institute: www.ebi.ac.uk
US Nacional Center for Biotechnology Information: www.ncbi.nlm.nih.gov
The Genome Database, supported by the Human Genome Project: www.gdb.org

Planetary Sciences and Spacial Exploration

SETI Project: www.seti-inst.edu
NASA's Mars Exploration programs: mars.jpl.nasa.gov
NASA's Space Projects Division:
www.spaceprojects.arc.nasa.gov/Space_Projects/Index.html
SETI-HISPANO: www.astrored.net/setihispano
Kepler Mision: Search for Habitable Planets: www.kepler.arc.nasa.gov
Darwin ? Space Infrared interferometer Mission: ast.star.rl.ac.uk/darwin/planets
Extrasolar Planets Encyclopedia: www.obspm.fr/encycl/encycl.html
Transit of Extrasolar Planets-HOMEPAGE: www.iac.es/proyect/tep/tephome.html
NASA Ames Mars Atmospheric Modeling Group: www-gcm.arc.nasa.gov/MGCM.html
COROT PAGE. The "Petites missions" program includes a mission for year 2002:
www.astrsp-mrs.fr/projets/corot/

Planetary Geology

Foro Científico de Meteoritos y Recursos Geológicos del Espacio:
tierra.rediris.es/merge/merge.html

Instituto Geográfico Nacional: www.geo.ign.es
Institut cartogràfic de Catalunya: www.icc.es
Instituto Andaluz de Geofísica: www.ugr.es/iag/iag.html
Sociedad Geológica de España: www.uam.es/SGE
Earth and Space Science Browser of the University of Michigan:
www.si.umich.edu/Space
ORFEUS Data Center: Observatories and Research Facilities for European
Seismology: orfeus.knmi.nl
Global Earthquake Response Center: www.earthquake.org
Incorporated Research Institutes for Seismology (IRIS): www.iris.washington.edu
Canadian National Geomagnetism Program: www.geolab.nrcan.gc.ca/geomag
Instituto Geofísico del Perú: www.igp.gob.pe
Asteroid and Comet Impact Hazards: impact.arc.nasa.gov/
International Research School of Planetary Sciences, Italy:
<http://irsps.sci.unich.it/>

Others

International Center for Scientific Research website:
www.cirs.net/indexenglish.htm
Alexandria Digital Library Project: www.alexandria.ucsb.edu/adl.html
La sociedad Planetaria en España: tierra.rediris.es/merge/tps-spain/

DIARIO de la Mars Express: www.esa.int
NOVEDADES: ESSA Mars Express Launch Special Site:
www.esa.int/export/SPECIALS/Mars_Express/SEMTNOXO4HD_0.html
NOVEDADES:ESA Mars Express Science and Technology Site:
sci.esa.int/science-e/www/object/index.cfm?fobjectid=33514

Professors in charge:

Programs/Research Lines:

Advanced computers and simulation methods to face the complexity of problems in astrobiological research

Advance Computation Lab, Simulation and Telematic Applications
http://www.cab.inta.es/03_01_lab_transd.php?lab_id=15&idioma=ESP

Research Projects:

[CABGrid: Virtual Lab for Computational Astrobiology](#)

[EGEE: Enabling Grids for E-science in Europe](#)

[GridWay: Adaptative Execution in Computational Grids](#)

[IRISGrid:National Iniciative of Grid](#)

[Thematic Net in Coordination of Middleware in Grid Activities](#)

STATISTICAL PHYSICS AND NONLINEAR DYNAMICS GROUP

UNIVERSIDAD DE CANTABRIA

<http://www.ifca.unican.es/~fises/>

Participants:

*Universidad de Cantabria
Centro Superior de Investigaciones Científicas*

Professors in charge:

Dr. [Luis Pesquera](#) (Full University Profesor of Theoretical Physics)

Dr. [Miguel A. Rodríguez](#) (CSIC Scientific Researcher)

Dr. [Angel Valle](#) (University
Lecturer)

Dr. [Juan M. López](#) (CSIC Ramón y Cajal Researcher)

Dr. [Horacio Wio](#) (EU Marie Curie Chair)

*** INSTITUTO DE BIOCOMPUTACIÓN Y FÍSICA DE SISTEMAS COMPLEJOS**

UNIVERSIDAD DE ZARAGOZA.

<http://bifi.unizar.es/miembros/miembros.html>

Participants:

Universidad de Zaragoza

Johns Hopkins University (Baltimore)

University of Rome "La Sapienza"

Character:

Interdisciplinary

Departments:

Theoretical Physics, Applied Mathematics, Biology

Professors in charge:

José Félix Sáenz Lorenzo, Director

Ernesto Freire (The Johns Hopkins University) and Vincenzo Marinari (University of Rome "La Sapienza"), Scientific Directors:

Objectives:

Putting together theoretical physicists, mathematicians, biochemists, condensed matter experts, etc.

*** NON LINEAR PHYSICS GROUP**

UNIVERSIDAD SANTIAGO DE COMPOSTELA

<http://chaos.usc.es/>

Professors in charge:

Vicente Pérez Muñuzuri, Director

Programs/Research Lines:

Meteorology, Chaos, Oceanography.

*** STATISTICAL PHYSICS GROUP**
INSTITUTE CARLOS I FOR THEORETICAL AND COMPUTATIONAL PHYSICS
UNIVERSITY OF GRANADA
<http://ergodic.ugr.es/>

Departments:

Electromagnetism and Physic of the Matter

Professors in charge:

Joaquin Marro (Statistical Physics)
<http://ergodic.ugr.es/jmarro/>

*** COMPUTATIONAL NEUROSCIENCES**
UNIVERSIDAD AUTÓNOMA DE MADRID
<http://www.ft.uam.es/Neurociencia/index.html>

Professors in charge:

Néstor Parga, <http://delta1.ft.uam.es/neurociencia/nestor/>
Gonzalo García de Polavieja (Ramon y Cajal Fellowship)
http://www.ft.uam.es/neurociencia/gonzalo/Leech_page.htm

*** NONLINEAR PHYSICS GROUP**
UNIVERSITY OF SEVILLA
<http://www.us.es/gfnl/>

Professors in charge:

Francisco Romero Romero, <http://www.us.es/gfnl/romero/index.htm>
Group director
Juan F Rodríguez Archilla, <http://www.us.es/gfnl/archilla/index.htm>
Leader of the LOCNET associate node

*** STATISTICAL AND NON LINEAR PHYSICS GROUP**
REAL SOCIEDAD ESPAÑOLA DE FISICA
<http://www.ucm.es/info/rsef/>

Professors in charge:

Carlos Pérez García, President
Maximino San Miguel and Juan M. Rodríguez Parrondo, Vicepresidents
Enrique Chacón Fuentes
Lourdes Vega Fernández

*** DEPT. ENGINYERIA INFORMÀTICA I MATEMÀTIQUES**
(COMPUTER SCIENCE & MATHEMATICS)
UNIVERSIDAD ROVIRA I VIRGILI

Professors in charge:

Alex Arenas, <http://www.etse.urv.es/~aarenas/presentacio/welcome.htm>
Albert Díaz-Guilera, Universitat de Barcelona.

3.- INDIVIDUALS:

- * Ricard Sole (Barcelona), complexity and bio-physics.
- * Paco Guinea (I. Ciencia Materiales, CSIC)
- * Enrique Louis (Alicante)
- * Romualdo Pastor-Soteras (RyC, Barcelona).
- * J.A. Martin-Pereda (UPM), engineering.
- * Cesareo Hernández (Valladolid), engineering and social sciences
- * Fernando Vega (Economist, Alicante), social sciences
- * J. Bascompte (EURYI, Doñana), bio/geo natural sciences,
- * J.M. Garcia-Ruiz (Granada), bio/geo natural sciences,
- * C. Duarte (IMEDEA, Mallorca, Dpto Recursos Naturales), bio/geo natural sciences
Member of the network "Thresholds" of the FP6 of the Eu in which physicists and economists take part.
- * Prof. Dr. Manuel Garcia VELARDE
Non linear Physics, Fluids
- * [Francesc Sagues](#) (Dpto Quimica Fisica, Barcelona), and his group.
- * [Pedro Tarazona](#) (UAM) and his group (Statistical Physics and interface with Biology)
- * Alfonso Valencia: Centro Nacional de Biotecnología valencia@cnb.uam.es. (Campo: Bioinformática)
- * Rafael Rubio de Urquía. Catedrático de Teoría Económica de la Universidad Autónoma de Madrid y Miembro del Instituto de Investigaciones Económicas y Sociales "Francisco de Vitoria". Modelling in Economy.
- * Pedro J. Pascual Broncano(pedro.pascual@iic.uam.es) and Carlos Aguirre Maeso (carlos.aguirre@ii.uam.es) (biological networks)

4.- CONFERENCES

* **FISES** (12th edition)

<http://fises03.fisica.unav.es/>

* **STATISTICAL PHYSICS IN NETWORKS**

Albert Díaz-Guilera Universitat de Barcelona

<http://www.ffn.ub.es/~albert/>

<http://usuarios.lycos.es/redes/sitges.htm>

http://www.us.es/araucaria/ideas10_3.htm

* **SITGES CONFERENCES IN STATISTICAL MECHANICS** (M. Rubi, Barcelona)

* **NO LINEAL** (H. Herrero, UCLM)

<http://matematicas.uclm.es/nolineal2004/>

MODELLING COOPERATIVE BEHAVIOR IN THE SOCIAL SCIENCES

(8th Granada seminar on Computational and Statistical Physics)

J. Marro <http://ergodic.ugr.es/cp/>

* **SECOND CONFERENCE OF THE EUROPEAN SOCIAL SIMULATION ASSOCIATION**,
Valladolid, C. Hernández <http://www.insisoc.org/essa04/>

* **PHYSICS OF RISK II**

Toledo, 23-26 Abril, A. Sanchez, <http://gisc.uc3m.es/COST-P10/index.html>

* **SEMINAR: RED DE NEURONAS: MODELOS, FLUCTUACIONES Y COOPERATIVIDAD.**

http://ciencias.unizar.es/semin_matcon.html

* **SUMMER SCHOOL: MENTE Y COMPLEJIDAD (MIND AND COMPLEXITY)**

El Escorial, august, 2004

<http://seneca.fis.ucm.es/parr/home.html>

Juan MR Parrondo: La ciencia de los sistemas complejos

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