

CURRICULUM VITAE

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Programa de investigación:

Estudios multidisciplinarios en sistemas complejos y ciencias del cerebro. Dentro de esta temática los trabajos han incluido desde el modelado matemático de arritmias cardiacas complejas, la descripción de motores moleculares y canales iónicos como matracas estocásticas, del rol cooperativo de las no-linealidades y el ruido en el código neural, hasta los fenómenos colectivos de autoorganización en enjambres de insectos sociales, hormigas, cerebros y comunidades de agentes tanto naturales como artificiales.

EDUCACIÓN:

- Colegio Nacional (Rafaela, Argentina) Bachillerato, 1973.
- Universidad Nacional de Rosario (Rosario, Argentina) Medicina, 1982.

POSICION ACTUAL:

- Investigador Principal del CONICET (Argentina), Area Física.
Facultad de Ciencias Medicas. Univ. Nacional de Rosario. Argentina.

EDITORIALES:

- Editorial Board "PLoS One".
- Editor Asociado de "Frontiers in Fractal Physiology".
- Editor Asociado de "Chaos, Solitons and Fractals".
- Advisory Board Editor de "Papers in Physics".
- Review Editor de "Frontiers in Neuroinformatics".
- Review Editor de "Frontiers in Integrative Neuroscience".

HONORES Y PREMIOS:

- Fellow de la American Physical Society (2007).
- American Physical Society Outstanding Reviewer (2009).
- Conferencista Distinguido, (Distinguished Lecturer), The Frank and Elaine Moss Hospitality

Fund. University of Saint Louis, Missouri (2007).

- The Santander Distinguished Visiting Professor. Psychology Department, Universidad Complutense de Madrid (UCM), Madrid, Spain (2007).
- Fulbright US Scholar Award (2005).
- Young Investigator Award. North American Society of Pacing and Electrophysiology (NASPE), (1989).
- Becario CONICET (Argentine National Research Council) (1982-85).

POSICIONES ANTERIORES:

- Professor (Research), Physiology, Northwestern Univ. Feinberg Med. School, Chicago, Illinois. (2009 a 2010).
- Associate Professor (Research), Physiology, Northwestern Univ. Feinberg Med. School, Chicago, Illinois. (2000 a 2009).
- Senior Scientist BBRI, West Los Angeles Veterans Adm. Medical Center. (2000 a 2003).
- Research Assistant Professor, Department of Physiology. University of Arizona, Tucson. (1993 a 1997).
- Research Assistant Professor, Computational Neuroscience. SUNY/Health Science Center at Syracuse (1991 a 1993).
- Research Assistant Professor, Pharmacology. SUNY/Health Science Center at Syracuse. New York. (1990 a 1991).
- Postdoctoral Research Associate, Pharmacology. SUNY/Health Science Center at Syracuse, New York. (Feb.1987 a Sept. 1990).
- Profesor Adjunto Full Time (por concurso) Fisiología Humana, Facultad de Ciencias Médicas. Universidad Nacional de Rosario, Argentina. (1986 a 1989).
- Instructor Jefe de Trabajos Prácticos, Fisiología Humana, Facultad de Medicina. Universidad Nacional de Tucumán, Argentina (en varias categorías desde 1982 a 1986).
- CONICET Becario Perfeccionamiento. Insibio. Bioingeniería Tucumán. Argentina. Supervisor: Dr M. E. Valentinuzzi. (1984-1985).
- CONICET Becario Iniciación. Insibio. Bioingeniería Tucumán. Argentina. Supervisor: Dr M. E. Valentinuzzi. (1982-1984).
- Auxiliar Docente/Instructor Jefe de Trabajos Prácticos, Fisiología Humana, Facultad de Ciencias Médicas. Universidad Nacional de Rosario, Argentina. (en varias categorías desde 1977 - 1982).

POSICIONES VISITANTES Y ADJUNTAS:

- Research Physiologist, Department of Physiology, University of California, Los Angeles, CA.

(2008-presente).

- Senior Scientist, Brentwood Biomedical Research Institute, West Los Angeles Veterans Adm. Medical Center. Los Angeles, CA. (2002-presente).
- Adjunct Professor, Physiology, Northwestern Univ. Feinberg Med. School, Chicago, Illinois. (2009- presente).
- Associate Scientist, Center for Stochastic Modeling, Mathematical and Sciences Department, Universidad de San Andrés, Buenos Aires, Argentina (2009 - presente)
- Visiting Professor, Instituto Universitario Ciencias de la Salud, University of the Balearic Islands, Palma de Mallorca, Spain. (Jul.-Ag 2009. Anfitrión: Dr. Pedro Montoya).
- Visiting Professor, Physics Department, University of the Balearic Islands, Palma de Mallorca, Spain. (Oct. 2007. Anfitrión: Dr. Oscar Calvo).
- Profesor, Programa de Doctorado en Ciencias Biomedicas, Medicina, Universidad Nacional de Rosario, Rosario, Argentina (2004 - presente).
- Visiting Associate Professor, Department of Physiology, Cornell University, Ithaca, NY, USA. (2001 - 2005).
- Visiting Professor, Psychology Department, University of the Balearic Islands, Palma de Mallorca, Spain. (June-July 2004. Anfitrión: Dr. Pedro Montoya).
- Adjunct Faculty, Center for Studies in Physics & Biology. The Rockefeller University. New York. (1999-2004).
- Visiting Professor, Cross-Disciplinary Physics Department, Institut Mediterrani d'Estudis Avançats (Mediterranean Institute for Advanced Studies), University of the Balearic Islands, Palma de Mallorca, Spain. (Jun.-Jul. 2003, Anfitrión: Dr. Manuel Matyas).
- Visiting Professor, Physics Department, University of the Balearic Islands, Palma de Mallorca, Spain. (Ma.-Jun.-Jul. 2002. Anfitrión: Dr. Raul Toral).
- Visiting Professor, Cross-Disciplinary Physics Department, Institut Mediterrani d'Estudis Avançats (Mediterranean Institute for Advanced Studies), University of the Balearic Islands, Palma de Mallorca, Spain. (Jun.-Jul. 2000. Anfitrión: Dr. Oreste Piro).
- Visiting Professor, Physics. Niels Bohr Institute. Copenhagen, Denmark (Veranos del 1996 y 1999. Anfitrión: Dr. Per Bak).
- Visiting Professor, Center for Studies in Physics and Biology. The Rockefeller University, New York (1997 y 1998, Anfitriones: MJ Feigenbaum y M Magnasco).
- Guest Scientist and External Faculty, Biomedical Engineering Dept., Favaloro University. Buenos Aires, Argentina (1997 - 2000).
- External Faculty, Computational Neuroscience Program, SUNY/Health Science Center at Syracuse. Syracuse, NY (1993 - 1996).
- Visiting Assistant Professor, Santa Fe Institute, Santa Fe, New Mexico (1992 -1995).

- Adjunct Professor, Department of Ecology and Evolutionary Biology. University of Arizona, Tucson (1993 -1994).

SUBSIDIOS RECIBIDOS: (últimos cinco años)

National Institute of Health (EEUU) :

- 2008-2013: "Chronic pain and emotional learning and memory". (Vania Apkarian PI, Dante R. Chialvo, Co-PI.) Agency: NIH/NINDS. Type: RO1, Total Granted Costs: US\$ 1,739,000.
- 2009-2014: "Cortical Pathophysiology of Pain". (Vania Apkarian PI, Dante R. Chialvo, Co-PI). Agency: NIH/NINDS Type: RO1 Total Granted Costs: US\$3,769,197 .
- 2002-2008: "Cortical Pathophysiology of Pain". (Vania Apkarian PI, Dante R. Chialvo, Co-PI). Agency: NIH/NINDS Type: RO1 Direct Granted Costs: US\$ 1,250,000.
- 2006-2008: "Characterizing temporal dynamics of spontaneous pain". Dante R. Chialvo, CoPI. Agency: NIH/NINDS. Type: R21, Total Granted Costs: US\$389,945.
- 2002-2006: "Cortical Dynamics for Pain Perception in Behaving Rats". (Vania Apkarian PI, Dante R. Chialvo, Co-PI.) Agency: NIH/NINDS. Type: RO1, Direct Granted Costs: US\$ 1,125,000.

National Science Foundation (EEUU):

- 2006-2007: "U.S.-Argentina Program: Workshop on Brain Physics and Mind Dynamics"; Mar del Plata, Argentina; December 2006. Dante R Chialvo PI- Agency: National Science Foundation, Americas Program. Total Granted Costs: US\$11,000.

CNPQ/FAPERN (Brasil):

- 2005-2007 "Cooperação entre saguís callithrix jacchus" (Ritmos biológicos e processos de aprendizagem). PI: Veronica S. Valentinuzzi, John Fontenelle Araujo. Universidade Federal de Rio Grande do Norte, Brazil.

Agencia Nacional de Promoción Científica y Tecnológica (Argentina):

- 2007-2010 "Complexity and dynamics of cognitive processes: High-resolution studies of cortical information-flow during a cognitive task". Mariano Sigman PI, Dante R. Chialvo, CoPI, Agency: Agencia Nacional de Promoción Científica y Tecnológica. Fondo para la Investigación Científica y Tecnológica Argentina. Type: PICT, Total Granted Costs: 280,000 Pesos.

Dirección General de Investigación del Ministerio de Educación y Ciencia (España):

- 2008-2010 "Dinámica de la actividad cerebral y la percepción del dolor crónico". Pedro Montoya PI, Dante Chialvo, CoPI,. Project SEJ2007-62312/PSIC. Agency: MEyC, España: Organismo receptor: Facultad de Psicología, Universidad de las Islas Baleares, Palma de Mallorca, España. Total Granted Costs: 225.000 Euros.)
- 2010-2012 "Dinámica de la actividad cerebral y la percepción del dolor crónico". Pedro Montoya PI, Dante Chialvo, CoPI,. Project SEJ2007-62312/PSIC. Agency: MEyC, España: Organismo receptor: Facultad de Psicología, Universidad de las Islas Baleares, Palma de Mallorca, España.

Total Granted Costs: 205.000 Euros.)

Fundació La Marató de TV3. (España).

- 2008-2011 “Brain dynamic of cognitive and affective processing in patients with fibromyalgia” Pedro J. Montoya PI, Dante Chialvo CoPi, Total Granted Costs: 199.668 Euros.

SERVICIO Y EXTENSION:

- CIMA, “Capacitacion e Investigacion para la Medicina Argentina”, Asociacion Civil. (Miembro fundador y actual Secretario). [<http://www.cimaprofisio.net>]
- HEFTA, “Health for the Americas”, NGO (Founding member and Vice-President).

ACTIVIDADES PROFESIONALES:

Organización de Workshops y Cursos :

2011

- Member of the International Advisory Committee of the XI Latin American Workshop on Nonlinear Phenomena, LAWNP11, San Luis Potosi, Mexico, 10-14 October , 2011.

2010

- Profesor visitante, “Musica y Neurociencia, Bases Neurales de la Consonancia en musica tonal”. Universidad de la República, Montevideo, Uruguay (June, 2010).
- Organizador y Chairman, “Dolor, Neuroimagenes y dinamica cerebral” Conferencia Internacional, UNR, Rosario, Octubre 24, 2010.

2009

- Member of the International Scientific Committee of the 8th International Workshop in Neuronal Coding 2009. National Cheng Kung University, Taiwan, (May 2009).
- Member of the International Advisory Committee of the XI Latin American Workshop on Nonlinear Phenomena, LAWNP09, Buzios, Brazil, 5-9 October , 2009.

2008

- Member of the Scientific Program Committee of the ECCB08 European Conference in Computational Biology, Cagliari, Italy. September 22-26, 2008.

2007

- Member of the International Scientific Committee of the 7th International Workshop in Neuronal Coding 2007. Uruguay, November 2007.
- Member of the International Scientific Committee SPIE BioMEMS and Nanotechnology III

(AU02) 4-7 December, Canberra, Australia, 2007

- Co-Organizer (with Maya Paczuski and Kim Sneppen) Workshop on “Computational Philosophy: Lessons from simple models” Niels Bohr Institute, Copenhagen, Denmark October 11-13, 2007.
- Lecturer, “Complejidad sin Matemáticas: Redes de interacción”. Universidad Complutense de Madrid, Spain (May-June, 2007).
- Lecturer, Second Latin-American School on Statistical Physics and Interdisciplinary Applications” organized by the UFRGS’s Complex Fluids group (Brazil) and the ICTP (Trieste, Italy), Bento Gonçalves, Brazil.

2006

- Lecturer, “Introducción a la Complejidad”. V Curso Boliviano de Sistemas Complejos. Universidad Mayor de San Andrés Carrera de Física, La Paz, Bolivia.
- Organizer and Chairperson, “Workshop on Brain Physics and Mind Dynamics”. Satellite activity to MEDYFINOL'06. Mar del Plata, Argentina, December 5, 2006.
- Member of the International Scientific Committee. XV Conference on Nonequilibrium Statistical Mechanics and Nonlinear Physics (MEDYFINOL'06). Mar del Plata, Argentina, December 4-6, 2006.

2005

- Director and Lecturer Post-Graduate Course (US Fulbright Scholar Award) on “Sistemas Complejos en Biología y Medicina”. Departamento de Física, Facultad de Matemática Astronomía y Física. Universidad Nacional de Córdoba. Córdoba, Argentina. August-October, 2005.
- Member of the Program Committee of the Third SPIE International Symposium on Fluctuations and Noise in Biological, Biophysical, and Biomedical Systems, Austin, TX, USA. July 2005.
- Member of the International Scientific Committee of the VIII Latin American Workshop on Nonlinear Phenomena, LAWNP05, Bariloche, Argentina, October 24-28, 2005.

2004

- Director (with JM Parrondo) and Lecturer Summer Course “Mente y Complejidad”. Universidad Complutense de Madrid. El Escorial. Spain. August 2004.
- Member of the International Scientific Committee of the Second SPIE International Symposium on Fluctuations and Noise in Biological, Biophysical, and Biomedical Systems (FN01). 25-28 May 2004. Maspalomas, Gran Canaria, Spain.

2003

- Lecturer, in the Summer Course “Emocion y Cerebro”. Universidad Complutense de Madrid. El Escorial. Spain. August 6-9, 2003.
- Organizer, International Workshop on “Complexity & Criticality in Networks” held at the Computational Neuroscience Meeting CNS 2003, Alicante, Spain University Miguel Hernández (Medical School Campus) July 8 - 9, 2003.
- Member of the International Scientific Committee and Lecturer, European Interdisciplinary School on Nonlinear Dynamics for System and Signal Analysis, EUROATTRACTOR2002, Warsaw, June 18 to June 27, 2002, Institute of Biocybernetics and Biomedical Engineering, Polish Academy of Sciences, Poland.

1996

- Co-Director and Lecturer, “MEDYFINOL 96”. Latin-American Summer School on Statistical Mechanics and Nonlinear Physics, Tucuman, Argentina, October 1996.

1994

- Co-Director: Interdisciplinary Autumn School on “Nonlinear Analysis of Physiological Time Series”. Philosophiezentrum der Universitaet Am Hubland, Wuerzburg, Germany, September 26 to 30, 1994.
- Co-Organizer International Workshop on “Nonlinear Dynamics, Fractality, and Self-organization of Complex Systems”, Philosophiezentrum der Universitaet Am Hubland, Wuerzburg, Germany, October 1-3, 1994.
- Co-Organizer: “The Role of Noise in Signal Transmission”, Symposium at the Biophysical Society Annual Meeting, New Orleans, March 1994 (with Frank Moss, Physics, University of Missouri)

1992

- Member of the Scientific Committee, Workshop on “Chaos, Fractals, 1/f Fluctuations and Self-organized Criticality in Biology and Medicine”, Wuerzburg, Germany, February 29, 1992.
- Co-Director: Workshop on “Power laws, Noise and Neural Code”, Syracuse, November 1992. (with AV Apkarian, SUNY/Syracuse).

1990

- Director: Invited Graduate Course “Four days of fractals, chaos and rhythms”. August 1990. School de Medicine, University of Rosario, Argentina.

1985

- Co-Director: Special Graduate Course on “Dynamical Systems and Chaos”. June 1985. Physics Department. National University of Tucumán, Argentina (with Drs. Iglesias and A. Coviello) .

Participación en Comités de Tesis, promociones y evaluadores de subsidios:

- Evaluador de subsidios y proyectos para:

EEUU:

National Institute of Health, NHBLI Cardiovascular Study Section (ad-hoc reviewer) (1992-1994)

National Institute of Health, Geriatrics and Rehabilitation Medicine Study Section (ad-hoc reviewer) (1998).

National Institute of Health, NINDS. (2009).

National Science Foundation (2003, 2006).

John D. and Catherine T. MacArthur Foundation (2008).

Europa:

Complexity Expert Reviewer for the NEST (“New Emerging Science & Technology”) 6th Framework Programme of the European Commission, Brussels (2006).

Italian National Institute for the Physics of Matter (INFN) (ad-hoc grant reviewer, 1998).

United Kingdom Biotechnology and Biological Sciences Research Council (BBSRC) (Grant reviewer, 2007).

Swiss Federal Institute of Technology, Zurich, ETH Zurich Research Commission (ad-hoc grant reviewer, 2008).

Argentina:

Grant Reviewer for the “Area de Ciencias Físicas y Matemáticas” de la “Agencia Nacional de Promoción Científica y Tecnológica” (ANPCyT), Argentina (1999-2001, 2003, 2004, 2005, 2006, 2009, 2010).

Promotion Reviewer for Conicet, Argentina (2005, 2006, 2007, 2010).

- Miembro de Comité de Tesis Doctoral:

EEUU:

Departments of Neuroscience (1995) and Mathematics (1996), University of Arizona, Tucson, AZ, Northwestern Univ. , (2002).

Europa:

University of Palermo, Italy Corso di DOTTORATO DI RICERCA in FISICA APPLICATA DOTTORATO INTERNAZIONALE (XXII CICLO) – 2011.

Helsinki Univ. Finland, Jurado Examinador Externo (2002, 2010).

ETH Zurich, Switzerland, Jurado Examinador Externo (2005).

University of Islas Baleares, Mallorca, Spain, Psychology Department Jurado Examinador Externo (2008).

Argentina:

Dept. de Fisica, FCEN, Universidad de Buenos Aires, Argentina. Jurado Tesis Doctoral (2005,2010),

University of Cordoba, Biology PhD Program . Thesis Committee Member (2007).

Instituto Tecnológico Buenos Aires (ITBA) Buenos Aires, Argentina. Jurado Tesis Doctoral (2010).

Sociedades y Revistas científicas:

- Advisory Editorial Board Member for "Chaos" (2002-2008).
- Review Editor for "Frontiers in Neuroinformatics" (desde 2007).
- Review Editor for "Frontiers in Integrative Neuroscience" (desde 2009).
- Miembro del Advisory Board Editor de "Papers in Physics" (desde 2009).
- Editor Asociado de "Frontiers in Fractal Physiology " (desde 2010).
- Editor Asociado de "Chaos, Solitons and Fractals " (desde 2010).

- Referee para las siguientes revistas científicas:

Physics Letters A, Physical Review Letters, Physical Review E, Physica A, Physica D, Science, Nature, Biological Cybernetics; Journal of Theoretical Biology, Circulation, Journal of Clinical Investigation, Journal of Neuroscience, Journal of Neurophysiology, Journal of Cardiovascular Electrophysiology, Chaos, Neuroscience Letters, Trends in Neurosciences, Experimental Neurology, Mathematical Bioscience, Europhysics Letters, Advances in Complex Systems, Neurocomputing, Nature Physics, Acta Biotheoretica, BioSystems, New Journal of Physics, Journal of Physics A, J. Physiology (Paris), Neurobiology of Disease, PLOS Computational Biology, Epilepsia. Anesthesia and Analgesia.

- Miembro de American Physical Society, Society for Neuroscience, Real Sociedad de Fisica de España y la Asociación Física Argentina.

DIRECCION Y SUPERVISION DE PERSONAL:

- Alain Vinet, Ph.D. Physics, U. of Montreal, Postdoctoral Fellow. SUNY, Syracuse. (1990-1991).
- Brant Hinrichs, Ph.D. student, Physics, Urbana-Champaign and Santa Fe Institute for Complex Systems, Thesis "Characterizing complex time-series from the scaling of prediction error", Co-Advisor, Norman Packard). (1992-1994)
- Tim Elston, Ph.D. Physics, Georgia Tech. Postdoctoral Fellow, Santa Fe Institute. Summer of 1994.

- Johannes Muller-Gerking, Ph.D. Physics and Cognitive Sciences, Univ. of Paris, Postdoctoral Fellow. University of Arizona (1995-1996).
- Katalin Gothard, Ph.D. student, Neuroscience. University of Arizona. (1994-1996).
- Chandra Ivey, Master student, Neuroscience, SUNY, Syracuse. (1995-1997).
- Guillermo Cecchi, PhD student, Center for Studies in Physics and Biology. The Rockefeller University. (1997-1999)
- Young Soo Kim, PhD student, Physiology and Neuroscience, Northwestern University Medical School. Chicago IL. (2000-2001).
- Marwan Baliki, PhD student, Neuroscience, Northwestern University Medical School. Chicago IL. (2002- 2008).
- Simona Lavarello, Visiting Scholar, Northwestern Univ. (2002-2004).
- Dr. Hector Berra, Visiting Fellow, Northwestern Univ. (2002-2004).
- MS Maria V. Centeno, Research Associate, Northwestern Univ. (2003-2008)
- Dr. Paul Geha, Postdoctoral Fellow, Northwestern Univ. (2003-2008).
- Dr. Jennifer Foss, Postdoctoral Fellow, Northwestern Univ. (2004-2005).
- Dr. Chuck Rudick, Postdoctoral Fellow, Northwestern Univ. (2005- 2006).
- Dr. Daniel Fraiman, Postdoctoral Fellow, Northwestern Univ. & Univ. of San Andres, Argentina.
- Dr. Ignacio Cifre, Postdoctoral Fellow, Northwestern Univ & UIB, Mallorca, Spain (2008-2009).
- Dr. Carol Sitges Quiroz, Postdoctoral Fellow, Northwestern Univ. (2009).
- Enzo Tagliazucchi. Co-director (con Pablo Balenzuela) Tesina de Licenciatura en Física, FCEN, UBA, (2008-2010). Actualmente estudiante de Doctorado en Gother University, Germany.
- Sebastian Quiroga Lombardi. Co-director (con Pablo Balenzuela) Tesina de Licenciatura en Física, FCEN, UBA, (2008-2010). Actualmente estudiante de Doctorado en Heidelberg University, Alemania.
- Leonardo Hess. Director Tesis de Doctorado en Ciencias Biomedicas, Universidad Nacional de Rosario, Argentina. (2010- presente)
- Dr. Daniel Fraiman, Investigador Asistente CONICET. Director de Carrera, Univ. of San Andres, Argentina.
- Ariel Haimovici, Codirector, Tesina de Licenciatura de Fisica. FCEN, Dept. Fisica, UBA (2010-presente)
- Sergio Manterola, Codirector, Tesina de Licenciatura de Fisica. FCEN, Dept. Fisica, UBA (2010-presente)

DOCENCIA:

En los siguientes tópicos:

Medical Physiology, Medical Pharmacology, Medical Neuroscience, Biophysics, Bioinstrumentation, Complex Systems in Biology and Medicine. Statistics and Computational Methods.

Cursos mas recientes:

- “Cardiovascular reflexes”. Univ. of California, Los Angeles. Physiology and Biophysics Course.
- “Nonlinear dynamics in Biology”. University of Arizona (Undergraduate Honors, 2006).
- “Biophysics and dynamics of nerve excitation”. SUNY Computational Neuroscience Program. (Graduate course, 1990)
- “Nonlinear physics & cardiology” SUNY Computational Neuroscience Program. (Graduate course, 1990)
- “Introducción a la Complejidad en Biología y Medicina”. Departamento de Física, Facultad de Matemática Astronomía y Física. Universidad Nacional de Córdoba. Córdoba, Argentina. Graduate Course, (3 meses, 2005).
- “Introducción a la Complejidad”. Universidad Mayor de San Andrés, Carrera de Física, La Paz, Bolivia, (2 semanas, 2006).
- “Complejidad sin Matemáticas: Redes de interaccion”. Facultad de Psicología, Universidad Complutense, Somosaguas, Madrid, Spain (40 horas, 2.5 Creditos, 2007).
- “Curso Musica y Neurociencia, Bases Neurales de la Consonancia en musica tonal”. Universidad de la Republica, Montevideo, Uruguay (40 horas, Junio, 2010).
- “I Curso Modular de Introduccion a las Neurociencias”. Universidad Nacional de Rosario, Rosario, Argentina (120 horas, 2010).

VISITAS CORTAS INVITADAS:

- Cornell University (1988, 1989, 1990).
- Los Alamos National Laboratory, Center for Nonlinear Science (Jul. 1989).
- Tulane University, Physics Department (1998).
- Santa Fe Institute. (1993-1994, 1995, 1996,2000).
- The University of Paris IV, France (1994).
- Wuerzburg University, Physiology Department, Germany (1992, 1993).
- Niels Bohr Institute. Denmark (1996, 1999).

- Cross-Disciplinary Physics Department IMEDEA, Institut Mediterrani d'Estudis Avançats (Mediterranean Institute for Advanced Studies), University of the Balearic Islands (UIB), Palma de Mallorca Spain (veranos de 2000, 2002, 2003 & 2004).
- Psychology Department. University of the Balearic Islands (UIB), Palma de Mallorca Spain (veranos of 2004 & 2005).
- Riken Brain Science Institute, Perceptual Brain Dynamics Laboratory, Wakoshi, Japan (2005).
- Peter Wall Institute for Advanced Studies at the University of British Columbia in Vancouver, British Columbia, Canada. (2005).
- Physics Department, Facultad de Matemática Astronomía y Física, Universidad Nacional de Córdoba, Córdoba, Argentina (2005).

PUBLICACIONES

A) PUBLICACIONES CON MAYOR IMPACTO :

SEGÚN EL SCIENCE CITATION INDEX ; H Index = 25 (actualizado a Mayo 2011).

- Sporns O, Chialvo DR, Kaiser M, and Hilgetag CC. Organization, Development and Function of Complex Brain Networks. Trends in Cognitive Sciences, 8 (9): 418-425 (2004). **Citations: 344**
- Eguiluz V, Chialvo DR, Cecchi G, Baliki M, Apkarian AV. Scale-free brain functional networks. Phys. Rev. Letters 92, 018102 (2005). Also as arxiv.org/abs/cond-mat/0309092. **Citations: 286**
- Chialvo DR, Gilmour RF, Jalife J. (1990) Low dimensional chaos in cardiac tissues. Nature 343: 653-657. **Citations: 143**
- Chialvo DR, Longtin A. Muller-Gerking J. (1997) Stochastic resonance in models of neuronal ensembles. Physical Review E. 55(2) 1798. **Citations: 139**
- Chialvo DR, Jalife J. (1987) Nonlinear dynamics in cardiac excitation and impulse propagation. Nature 330: 749-752. **Citations: 127**
- Chialvo DR, Michaels D, Jalife J. (1990) Supernormal excitability as a mechanism of chaotic dynamics of activation in cardiac Purkinje fibers. Circulation Res. 66: 525-545. **Citations: 122**
- Chialvo DR, Millonas MM. (1995) Asymmetric unbiased fluctuations are sufficient for the operation of a correlation ratchet. Physics Letters A 209, 26-30. **Citations: 108**
- Apkarian AV, Sosa Y, Krauss B, Thomas PS, Fredrickson BE, Levy RE, Harden RN, Chialvo, DR. Chronic pain patients are impaired on an emotional decision-making task. Pain 108 (1-2) 129-136 (2004). **Citations: 97**
- Baliki M, Chialvo DR, Levy RE, Harden R, Parrish T, Apkarian AV. Chronic pain and the emotional brain: Specific brain activity associated with spontaneous fluctuations of intensity of chronic back pain. Journal of Neuroscience 26 (47): 12165 (2006). **Citations: 91**

B)LISTA COMPLETA DE PUBLICACIONES CON REFERATO (> 2800 CITAS REGISTRADAS EN SCIENCE CITATION INDEX)

1. Balenzuela P, Braun H, & Chialvo, DR. Ghost stochastic resonance: An introductory review *Contemporary Physics*, (2011).
2. Expert P, Lambiotte R, Chialvo DR, Christensen K, Jensen HJ, Sharp DJ & Turkheimer F. Self-similar correlation function in brain resting-state functional magnetic resonance imaging. *Journal of The Royal Society Interface* 8, 472-479 (2011).
3. Walteros C, Sánchez-Navarro JP, Muñoz-García MA, Martínez-Selva JM, Chialvo DR, & Montoya P. Altered associative learning and emotional decision-making in fibromyalgia. *Journal of Psychosomatic Research* 70, 294-301 (2011).
4. Cifre I, Sitges C, Fraiman D, Muñoz MA, Balenzuela P, González Roldán A, Martínez-Jauand M, Larbig W, Birbaumer N, Chialvo DR & Montoya P. *Journal of Psychosomatic Research* (2011).
5. Scremin OU, Chialvo DR, Lavarello S, Berra HH, Lucero MA. The environmental pollutant endosulfan disrupts cerebral cortical function at low doses. *Neurotoxicology*. 2010 Dec 7. [Epub ahead of print] PMID: 21144862
6. Tagliazucchi E, Balenzuela P, Fraiman D, Montoya P & Chialvo DR. Spontaneous BOLD event triggered averages for estimating functional connectivity at resting state. *Neurosci. Lett* 488(2):158-163 (2010).
7. Chialvo DR. Emergent complex neural dynamics, *Nature Physics* 6, 744-750 (2010).
8. Balenzuela P, Chernomoretz A, Fraiman D, Cifre I, Sitges C, Montoya P and Chialvo DR. Modular organization of brain resting state networks in chronic back pain patients. *Front. Neuroinform.* 4:116. doi: 10.3389/fninf.2010.00116 (2010).
9. Ribeiro TL, Ribeiro S, Caixeta F, Belchior H, Chialvo DR, Nicolelis MAL, Copelli M. Spike avalanches exhibit unified dynamics across the sleep-wake cycle. *Plos One*, 30;5(11):e14129 (2010).
10. E. Tagliazucchi, P. Balenzuela, D. Fraiman and D.R. Chialvo, Brain resting state is disrupted in chronic back pain patients, *Neurosci. Lett.* 485 (1): 26-31 (2010)
11. Quiroga Lombard CS, Balenzuela B, Braun H and Chialvo DR. A simple conceptual model to interpret the 100,000 years dynamics of paleo-climate records. *Nonlin. Processes Geophys.* (2010).
12. Anteneodo C, Malmgreen D, Chialvo DR. Poissonian bursts in e-mails correspondence. *European Physics Journal*, (2010).
13. Perotti JI, Billoni OV, Tamarit FA, Chialvo DR, Cannas SA. Emergent self-organized complex network topology out of stability constraints. *Physical Rev. Letters*, 103, 108701 (2009).doi: 10.1103/PhysRevLett.103.108701.
14. Anteneodo C & Chialvo DR, Unraveling the fluctuations of animal motor activity. *Chaos*, 19, 033123 (2009).
15. Peterman T, Thiagarajan T, Lebedev M, Nicolelis M, Chialvo D, Plenz D. Spontaneous Cortical

- Activity in Awake Monkeys Composed of Neuronal Avalanches, *Proc. Natl. Acad. Sci. USA*, doi: 10.1073/pnas.0904089106, (2009).
16. Fraiman D, Balenzuela P, Foss J, Chialvo DR. Ising-like dynamics in large scale brain networks. *Phys. Rev. E* 79, 061922 (2009).
 17. Baliki MN, Geha PY, Apkarian AV, Chialvo DR. Beyond feeling: chronic pain hurts the brain disrupting the default-mode network dynamics. *Journal of Neuroscience* 28(6): 1398-1403, (2008).
 18. Holschneider DP, Scremin OU, Chialvo DR, Kay BP, Maarek J-M I. Flattened Cortical Maps of Cerebral Function in the Rat: A Region-of-Interest Approach to Data Sampling, Analysis and Display. *Neuroscience Letters*, doi:10.1016/j.neulet.2008.01.061, (2008).
 19. Chialvo DR. Emergent complexity: what uphill analysis or downhill invention can not do. *New Ideas in Psychology*, 26, 158-173 (2008).
 20. Chialvo DR, Balenzuela P, Fraiman D. The brain: What is critical about it? *American Institute of Physics Conference Proceedings* 1028, 28-45 (2008).
 21. Braun H, Ditlevsen P, Chialvo DR. Solar forced Dansgaard-Oeschger events and their phase relation with solar proxies. *Geophys. Res. Lett.*, 35, L06703, doi:10.1029/2008GL033414 (2008).
 22. Braun H, Ganopolski A, Christl M, Chialvo DR. A simple conceptual model of abrupt glacial climate events. *Nonlinear Processes in Geophysics* 14, 709-721 (2007).
 23. Chialvo DR. The brain near the edge. *Computational and Mathematical Modeling of Cooperative Behavior in Neural Systems. Ninth Granada Lectures. AIP Conference Proceedings*, (887) 1-12 (2007).
 24. Geha PY, Baliki MN, Chialvo DR, Harden RN, Paice JA, Apkarian AV. Brain activity for spontaneous pain of post-herpetic neuralgia and its modulation by lidocaine patch therapy. *Pain* 128 (1-2): 88-100 (2007).
 25. Baliki M, Chialvo DR, Levy RE, Harden R, Parrish T, Apkarian AV. Chronic pain and the emotional brain: Specific brain activity associated with spontaneous fluctuations of intensity of chronic back pain. *Journal of Neuroscience* 26 (47): 12165 (2006).
 26. Chialvo DR. Are our senses critical? *Nature Physics* 2, 301 (2006).
 27. Apkarian AV, Lavarello S, Randolph A, Berra HH, Chialvo DR, Besedovsky HO, del Rey A. Expression of IL-1b in supraspinal brain regions in rats with neuropathic pain. *Neuroscience Letters*, doi:10.1016/j.neulet.2006.08.034. (2006).
 28. Apkarian AV and Chialvo DR. The shadow of pain. *Pain*, 123 (3) 221-222, (2006).
 29. Calvo O and Chialvo DR. Ghost stochastic resonance on an electronic circuit. *International Journal of Bifurcation and Chaos* 16(3) 731-735 (2006).
 30. Scremin OU, Shih T-M, Huynh L, Roch M, Sun W, Chialvo DR, Jenden DJ. Circadian rhythms of heart rate and locomotor activity after treatment with low-dose cholinesterase inhibitors. *Journal of Applied Toxicology*, 26,410-418 (2006).

31. Lopera A, Buldu JM, Torrent MC, Chialvo DR, Garcia Ojalvo J. Ghost stochastic resonance with distributed inputs in pulse-coupled electronic neurons. *Physical Review E*. 73:021101 (2006).
32. Foss JM, Apkarian AV, Chialvo DR. Dynamics of pain: Fractal dimension of temporal variability of spontaneous pain differentiates between pain states. *Journal of Neurophysiology* 95:730-736, (2006).
33. Jabakhanji R, Foss JM, Berra HH, Centeno MV, Apkarian AV, and Chialvo DR. Inflammatory and neuropathic pain animals exhibit distinct responses to innocuous thermal and motoric challenges. *Molecular Pain*, 2006, 2:1. doi:10.1186/1744-8069-2-1.
34. Baliki M, Katz J, Chialvo DR, Apkarian AV. Single subject pharmacological-MRI (phMRI) study: Modulation of brain activity of psoriatic arthritis pain by cyclooxygenase-2 inhibitor. *Molecular Pain* 2005, 1:32. doi:10.1186/1744-8069-1-32.
35. Eguiluz V, Chialvo DR, Cecchi G, Baliki M, Apkarian AV. Scale-free brain functional networks. *Phys. Rev. Letters* 92, 018102 (2005). Also as arxiv.org/abs/cond-mat/0309092
36. Baliki M, Calvo O, Chialvo DR, Apkarian AV. Spare nerve injury rats exhibit thermal hyperalgesia on an automated operant dynamic thermal escape task. *Molecular Pain* doi:10.1186/1744-8069-1-18 (2005).
37. Scremin OU, Shih T-M, Huynh L, Roch M, Sun W, Chialvo DR, Jenden DJ. Low-dose cholinesterase inhibitors do not induce delayed effects on cerebral blood flow and metabolism. *Pharmacology, Biochemistry and Behavior*, 80(4) 529-540 (2005).
38. Sporns O, Chialvo DR, Kaiser M, and Hilgetag CC. Organization, Development and Function of Complex Brain Networks. *Trends in Cognitive Sciences*, 8 (9): 418-425 (2004).
39. Chialvo DR. Critical brain networks. *Physica A*, 340(4) 756-765 (2004). Also as arxiv.org/abs/cond-mat/0402538.
40. Apkarian AV, Sosa Y, Krauss B, Thomas PS, Fredrickson BE, Levy RE, Harden RN, Chialvo, DR. Chronic pain patients are impaired on an emotional decision-making task. *Pain* 108 (1-2) 129-136 (2004).
41. Calvo O, Chialvo DR, Martinez V, Mirasso C, Toral R. Anticipated synchronization, a metaphorical linear view. *Chaos* 14 (1), 7-13 (2004).
42. Chialvo DR. How we hear what isn't there: a neural mechanism for the missing fundamental illusion. *Chaos*, 13(4) 1226-1230 (2003).
43. Buldu JM, Chialvo DR, Mirasso DR, Torrent MC, Garcia Ojalvo J. Ghost Stochastic Resonance in a semiconductor laser with optical feedback. *Europhysics Letters*, 64 (2), 178-184 (2003).
44. Chialvo DR, Physiology - Unhealthy surprises. *Nature* 419 (6904): 263-263 (2002).
45. Chialvo DR, Illusions and ghost resonances: how we could see what isn't there. (Unsolved Problems of Noise, AIP Proceedings, 2002).
46. Holschneider, DP Scremin OU, Chialvo DR, Chen K, Shih JC. Heart Rate Dynamics in Monoamine Oxidase-A and -B Deficient Mice. *Am J Physiol-Heart C* 282 (5):H1751-H1759 (2002).

47. Holschneider DP, Scremin OU, Ross K, Chialvo DR, Chen K, Shih JC. Increased baroreceptor response in mice deficient in Monoamine Oxidase-A and -B. *Am. Journal of Physiology C* 282 (3): H964-H972 (2002)
48. Chialvo DR, Calvo O, Gonzales D, Piro O, Savino GV. Subharmonic stochastic synchronization and resonance in neuronal systems. *Physical Review E* 65(5) 050902(R) (2002).
49. Bak P and Chialvo DR (2001) Adaptive learning by extremal dynamics and negative feedback. *Physical Review E* .63(3) 1912-1924.
50. Chialvo DR, Cecchi GA, Magnasco M (2000) Noise-induced memory in extended excitable systems. *Physical Review E* 61(5) 5654-5658. Also as xxx.lanl.gov/adap-org/9905003.
51. Cecchi GA, Sigman M, Alonso JM, Martinez L, Chialvo DR, Magnasco M. (2000) Noise in neurons is message-dependent. *Proceedings National Academy of Sciences* 97(10) 5557-5561. Also as xxx.lanl.gov/cond-mat/0004492.
52. Perazzo C, Fernandez E., Willshaw P, Chialvo DR. (2000) Scale invariant properties of day-to-day blood cells counts: a sign of criticality? *Fractals* 8(3) 279-283.
53. Chialvo DR and Bak P. (1999) Learning from mistakes. *Neuroscience* 90 (4) 1137-1148. (also as 1997 Santa Fe Institute Working Paper 97-08-077).
54. Longtin A and Chialvo DR. (1998) Deterministic and Stochastic resonances for excitable systems. *Phys. Rev. Letters* 81(18) 4012-4015.
55. Ivey C, Apkarian AV and Chialvo DR. (1998) Noise-induced changes in tuning curves of mechanoreceptors. *J. of Neurophysiology* 79, 1879-1890.
56. Chialvo DR, Longtin A. Muller-Gerking J. (1997) Stochastic resonance in models of neuronal ensembles. *Physical Review E*. 55(2) 1798.
57. Chialvo DR, Dykman MI, Millonas MM. (1997) Fluctuation-induced transport in a periodic potential: noise versus chaos. *Physical Review Letters*, 78(8) 1605.
58. Millonas MM, Chialvo DR. (1996) Control of voltage bio-molecules via non-equilibrium kinetic focusing. *Physical Review Letters* 76(3) 550-553.
59. Millonas MM, Chialvo DR. (1996) Non-equilibrium fluctuation-induced phenomena in Josephson junctions. *Physical Review E*. 53(3) 2239-2242
60. Rauch E, Millonas MM, Chialvo DR. (1995). Pattern formation and functionality in swarm models. *Physics Letters A*. 207, 185-193.
61. Chialvo DR, Millonas MM. (1995). Asymmetric unbiased fluctuations are sufficient for the operation of a correlation ratchet. *Physics Letters A* 209,26-30.
62. Chialvo DR. (1995) Generic excitable dynamics on a two-dimensional map. *Chaos, Solitons and Fractals* 5, 3-4,461-479.
63. Scharf R, Meesmann M, Boese J, Chialvo DR, Kniffki K. (1995). General relation between variance-time curve and power spectral density in the presence of 1/f fluctuations. *Biological Cybernetics*. 73,255-263.

64. Krauss BR, Serog BJ, Chialvo DR, Apkarian AV. (1994) Dendritic complexity and the evolution of cerebellar Purkinje cells. *Fractals* 2(1) 95-102.
65. Meesmann M, Boese J, Chialvo DR, Kowallik P, Bauer W, Peters W, Gruneis F, Kniffki K. (1993) Demonstration of $1/f$ fluctuations and white noise in the human heart rate: Implications for self-similarity. *Fractals* 1(3)312-320.
66. Pantazelou E, Moss F, Chialvo DR. (1993) Noise sampled signal transmission in an array of Schmitt triggers. Proc. XII Intern. Conf. on "Noise in Physical Systems and $1/f$ Fluctuations", P. Handel (Ed.), (American Institute of Physics, New York) 549-552.
67. Chialvo DR, Apkarian AV. (1993) Modulated noisy biological dynamics. Three examples. *Journal of Statistical Physics*. 70:375-391.
68. Chialvo DR, Vinet A, Michaels D, Jalife J. (1991) Bifurcations in a simple hydraulic oscillator: the "Tantalus' cup". *European Journal of Physics*, 12, 297-302.
69. Chialvo DR, Jalife J. (1991) A $1/f$ power spectral density of the cardiac QRS complex is not associated with a fractal Purkinje system. *Biophysical Journal* 60,1303-1305.
70. Chialvo DR, Gilmour RF, Jalife J. (1990) Low dimensional chaos in cardiac tissues. *Nature* 343: 653-657.
71. Davidenko J, Kent P, Chialvo DR, Michaels D, Jalife J (1990) Sustained vortex-like waves in normal isolated ventricular muscle. *Proc. Natl. Acad. Sci. USA* 87:8785-8789.
72. Chialvo DR, Michaels D, Jalife J. (1990) Supernormal excitability as a mechanism of chaotic dynamics of activation in cardiac Purkinje fibers. *Circulation Research* 66: 525-545.
73. Vinet A, Chialvo DR, Michaels D, Jalife J. (1990) Nonlinear dynamics of rate-dependent activation in models of single cardiac cells. *Circulation Research* 67:1510-1524.
74. Michaels D, Chialvo DR, Jalife J. (1989) Chaotic activity in a mathematical model of the vagally driven sinoatrial node. *Circulation Research* 65: 1350-1360.
75. Delgado C, Steinhaus B, Delmar M, Chialvo DR, Jalife J. (1989) Directional differences and margin of safety for propagation in anisotropic ventricular epicardial muscle. *Circulation Research* 67, 97-110.
76. Chialvo DR, Jalife J. (1987) Nonlinear dynamics in cardiac excitation and impulse propagation. *Nature* 330: 749-752.

C) CAPITULOS EN LIBROS Y ARTICULOS INVITADOS:

1. The collective brain. Tagliazucchi E. & Chialvo D.R (2011), Proceedings Decision-Making Workshop. World Scientific, Singapore.
2. Berra HH, Balenzuela P, Fraiman D, Chialvo DR, Functional Collectivity in Brain Networks, EOLSS Online in Complex Networks, edited by Guido Caldarelli, in Encyclopedia of Life Support Systems (EOLSS), Developed under the Auspices of the UNESCO, Eolss Publishers, Oxford ,UK, (<http://www.eolss.net>), 2009.
3. Buldu JM, Gonzalez CM, Garcia Ojalvo J, Torrent MC, Trull J, Mirasso CR, Chialvo DR (2004),

- Ghost resonance in coupled lasers. *Experimental Chaos: 8th Experimental Chaos Conference*, Boccaletti S. et al (Eds.) CP742, American Institute of Physics Conference Proceedings 742, 247-252.
4. Buldu JM, Garcia Ojalvo J, Torrent MC, Sancho JM, Mirasso CR, Chialvo DR (2004). External Noise in semiconductor lasers. *Fluctuations and Noise in Photonics and Quantum Optics II*, Heszler P., Abbott D, Gea-Banacloche JR, Hemmer PR (Eds.), Proceedings of SPIE Vol. 5468, 118-132 .
 5. Mirasso CR, Buldu JM, Chialvo DR, Torrent MC, Garcia Ojalvo J (2003) Ghost resonance in a semiconductor laser operating in an excitable regime. *Fluctuations and Noise in Photonics and Quantum Optics*, Abbott D, Shapiro J H, Yamamoto Y (Eds.), Proceedings of SPIE 5111,118-125.
 6. Gilmour RF, Chialvo DR. (1999). Electrical restitution, critical mass and the riddle of fibrillation. *Journal of Cardiovascular Electrophysiology (Invited Editorial)* 10(8):1087-9
 7. Chialvo DR. (1997). Mapping "sameness" into "neighborhoodness". In "Fractals Frontiers", 23-29, Novak MM and Dewey TG (Eds.) , World Scientific, Singapore.
 8. Chialvo DR, Millonas MM. (1995) How swarms build cognitive maps. In "The biology and technology of intelligent autonomous agents". Luc Steels (Ed.) NATO ASI Series, (144) 439-450.
 9. Gilmour RF, Chialvo DR, Jalife J. (1994) Calcium channel blockers. In "Electropharmacological control of cardiac arrhythmias." Singh BH, Wellens HJJ, Hiraoka M, (Eds) Mount Kisco, NY, Futura Publishing Company Inc.
 10. Chialvo DR, Apkarian AV. (1993) One more reason why neurons need to be noisy. In "SPIE Chaos in Biology and Medicine", 2036:57-63.
 11. Gilmour RF, Watanabe M, Chialvo DR.(1993) Low dimensional dynamics in cardiac tissues. Experiments and Theory. In "SPIE Chaos in Biology and Medicine" 2036:2-9.
 12. Vinet A, Chialvo DR, Michaels D, Jalife J. (1991) Nonlinear dynamics and ionic mechanisms of excitation patterns in models of cardiac myocytes. In "Nonlinear Wave Processes in Excitable Media". Holden AV, Markus M, Othmer H. (Eds.) London, Plenum Press.
 13. Jalife, J, Chialvo DR. (1991) Low dimensional chaos and the transition from rhythmic to arrhythmic behavior in cardiac tissue. In "Activation, Circulation and Transport in the cardiac muscle". Sideman S and Beyar R (Eds). Kluwer Academic Publisher. M.A. USA.
 14. Chialvo DR, Gilmour RF, Jalife J (1990) Electrophysiological basis of chaotic dynamics of excitation in cardiac Purkinje fibers. In "Comparative Electrocardiology". Janse MJ, Meijler F, van der Tweel (Eds) Proc. Kon. Ned. Akad. v. Wetensch. 93(4) 395-407.
 15. Vinet A, Chialvo DR, Jalife J. (1990) Irregular dynamics of excitation in biologic and mathematical models of cardiac cells. *Annals of the New York Academy of Sciences*. 601:281-298.
 16. Chialvo DR, Jalife J. (1990) On the nonlinear equilibrium of the heart. Locking phenomena and chaos in cardiac Purkinje fibers. In "Cardiac Electrophysiology: From the Cell to Bedside". Zipes D, Jalife J. (Eds) Saunders Co., Philadelphia, pp 201-214.

17. Chialvo DR. (1990) Towards very simple generic models of excitable cells. Order and chaos in cardiac tissues. Facts and conjectures. In "Mathematical Approaches to Cardiac Arrhythmias". Jalife J. (Ed) Annals of the New York Academy of Sciences 591, 351-366.
18. Michaels DC, Chialvo DR, Matyas EP, Jalife J. (1990) Dynamics of synchronization in the sinoatrial node. In "Mathematical Approaches to Cardiac Arrhythmias". Jalife J (Ed) Annals of the New York Academy of Sciences 591,154-165.
19. Delmar M, Delgado C, Chialvo DR, Michaels D, Jalife J. (1989) On the problem of anisotropic propagation in ventricular muscle. In "Lethal Arrhythmias Resulting from Myocardial Ischemia and Infarction." Rosen MR, Palti Y. (Eds) Martinus Nijhoff. The Hague.
20. Valentinuzzi M, Arredondo MT, Monzon JT, Armayor M, Guillen S, Ruiz E, Savino G, Chialvo DR, Spinelli J. (1984) Fibrillation Defibrillation, a critical review. La Semana Medica 164: 5282, 4-235.

D) TRABAJOS SOMETIDOS O EN PREPARACION:

1. Montoya P, AV Apkarian & Chialvo DR. Long-term statistical properties of pain and daily activity fluctuations of chronic pain patients. Pain, (2008, submitted).
2. Chialvo DR. The brain at the edge. Imperial College Press, UK. (Book, due summer 2011)
3. Plenz D & Chialvo DR. Scaling properties of neuronal avalanches are consistent with critical dynamics. (Submitted 2009).
4. Muñoz MA, Tagliazucchi E, Hess L, Fraiman D, Balenzuela P, Montoya P. Chialvo DR, Functional connectivity in fibromyalgia: a rBETA analysis. Neurosc. Letters (submitted, 2011).
5. Muñoz MA, Bose S, Cifre I, Sitges C, Turkheimer F, Chialvo DR, Montoya P. Altered brain structure and resting state functional connectivity in patients with fibromyalgia. Pain (submitted, 2011).
6. Chialvo DR, Tagliazucchi E, Balenzuela P, Fraiman D. Point process analysis of brain resting fMRI dynamics, PNAS (in revision, 2011)
7. Fraiman D. & Chialvo DR. Optimum information sharing in the dynamics of fMRI resting state. PLOS (submitted, 2011).

E) RESUMENES DE COMUNICACIONES A CONFERENCIAS (SELECCIONADOS):

1. Chialvo DR, Iglesias G, Perez A. A method for early detection of ventricular arrhythmic probability through the electrocardiogram. Preliminary results. Argentinean Society of Bioengineering. Buenos Aires, 1984.
2. Chialvo DR, Chiale P, Jalife J. Period doubling and irregular dynamics of propagation in cardiac Purkinje fibers. Biophys. J 51: 255a, 1987.
3. Chialvo DR, Michaels D, Jalife J. Experimental observations and difference equations model of nonlinear dynamics and chaos in non oscillatory cardiac tissues. Dynamic Patterns in Complex

Systems. October 21-23, 1987.

4. Chialvo DR, Michaels D, Jalife J. Analysis of chaotic dynamics of excitation and propagation in non pacemaker cardiac tissues. *Biophys. J* 53: 158a, 1988.
5. Michaels D, Chialvo DR, Jalife J. Chaotic dynamics of repetitive vagal control of the sinus node. A mathematical model. *Biophys. J* 53: 160a, 1988.
6. Delgado C, Delmar M, Chialvo DR, Jalife J. Active generator properties and margin of safety for propagation in anisotropic sheep ventricular muscle. *Biophys. J* 53: 160a, 1988.
7. Delgado C, Delmar M, Chialvo DR, Jalife J. Directional differences in excitability in sheep epicardial muscle. First International Congress on Molecular and Cellular Mechanism of Antiarrhythmic Agents. June 19-23,1988.
8. Chialvo D, Michaels D, Jalife J: Different modes of recovery of excitability as determinants of periodic and nonperiodic dynamics in cardiac Purkinje fibers. *The Physiologist* 31: 4, A178, 1988.
9. Chialvo DR, Gilmour RF, Michaels D, Jalife J: The mechanism of chaotic dynamics in isolated cardiac Purkinje fibers. *Circulation* 80: 4 II-133, 1989.
10. Gilmour RF, Chialvo DR, Jalife J: Nonlinear dynamics of activation across canine Purkinje-muscle junctions. *Circulation* 80: 4 II-130, 1989.
11. Anumonwo J, Hoshino K, Chialvo DR, Delmar M, Jalife J: Entrainment and Phase resetting of pacemaker activity in single sinus node cells. *Circulation* 80: 4 II-133, 1989.
12. Kniffki K, Chialvo DR, Vahle-Hinz C, Apkarian A. Fractal Dimension of neurons located in the cat's thalamic ventrobasal complex and its ventral periphery. *Society for Neuroscience* 246.7. 17,622, 1991.
13. Chialvo D, Pantazelou E, Moss F. Noise Sampled Signal transmission in an array of Schmitt triggers. *American Physical Society*, 1993.
14. Chialvo DR, Barnes C, McNaughton B, Metha M. Cooperative role of noise and periodic input in Theta cells output. *Society for Neuroscience* 1995.
15. Millonas MM, Chialvo DR. Control and spectroscopy of Voltage-Dependent biomolecules by non-equilibrium kinetic focusing. *American Physical Society Meeting*. March 1996.
16. Rauch E, Millonas MM, Chialvo DR. Pattern formation and functionality in swarm models. *American Physical Society Meeting*. March 1996.
17. Gilmour RF, Riccio ML, Koller ML, Chialvo DR. Electrical restitution and ventricular fibrillation. *American Heart Assoc.* 1998.
18. Brueggemann J, Y Kim, DR Chialvo, AV Apkarian. Cortical population dynamics for pain. . *Society for Neuroscience Meeting* 2001, San Diego, CA.
19. Kim Y, O Calvo, J. Brueggemann, DR Chialvo, AV Apkarian "Algotrack": a novel thermal algisia assessment tool. *Society for Neuroscience Meeting* 2001, San Diego, CA.
20. Holschneider DP, OU Scremin, D Chialvo, K Chen, JC Shih. Mice deficient in monoamine oxidase A and B show a cardiac arrhythmia accentuated during exposure to the stress of a novel

environment. Society for Neuroscience Meeting 2001, San Diego, CA.

21. Chialvo DR, The auditory perception of pitch and illusory phase-locking, BIOCOMP 2002, Napoli Italy, June 2002.
22. Chialvo DR. Neural mechanism for the missing fundamental illusion and the perception of pitch. Society for Neuroscience Meeting 2002, Orlando, FL.
23. Scremin OU, TM Shih, L Huynh, M Roch, W Sun, DR Chialvo, J D'Elia, C Cable, DJ Jenden. Effects of chronic exposure to low levels of cholinesterase inhibitors on cerebral blood flow. Society for Neuroscience Meeting 2002, Orlando, FL.
24. Ali S, AV Apkarian, Y Sosa, ID Grachev, DR Chialvo. Self-organized brain chemistry maps: an approach to study altered brain chemistry in chronic pain. Society for Neuroscience Meeting 2002, Orlando, FL.
25. Baliki M, Y Sosa, T.B. Parrsih, RN Harden, RM Levy, JC Houk, D.R. Chialvo, AV Apkarian. Chronic back pain (cbp) is an orbitofrontal condition: an fMRI study of ongoing chronic pain. Society for Neuroscience Meeting 2002, Orlando, FL.
26. Baliki M, Chialvo DR, O Calvo, AV Apkarian. Spared nerve injury rats exhibit profound thermal hyperalgesia on a cortex dependent pain behavioral measure. American Pain Society Meeting, Chicago, IL. 2003.
27. Apkarian AV, M Baliki, Y Sosa, T.B. Parrsih, RN Harden. Chronic arthritis pain modulation by a cyclooxygenase-2 inhibitor: An fMRI-pharmacological study. American Pain Society Meeting, Chicago, IL. 2003.
28. Chialvo DR, M Baliki, H Berra, S Lavarello, AV Apkarian. From acute to chronic pain state: Long-term telemetric recording of cortical activity in chronic constriction injury (cci) rats. American Pain Society Meeting, Chicago, IL. 2003.
29. Apkarian AV, M Baliki, Y Sosa, T.B. Parrsih, RN Harden, RM Levy, D.R. Chialvo. Chronic back pain perception is mediated through orbitofrontal activity: an fMRI study of spontaneous fluctuations of ongoing pain. American Pain Society Meeting, Chicago, IL. 2003.
30. Chialvo DR, M Baliki, Y Sosa, O Calvo, AV Apkarian. Linear and non-linear aspects of temporal dynamics of acute pain: Psychophysics in normal subjects. American Pain Society Meeting, Chicago, IL. 2003.
31. Chialvo DR, M Baliki, Y Sosa, O Calvo, AV Apkarian. Nonlinear analysis of ratings of spontaneous fluctuations of pain in chronic back pain may have diagnostic value. American Pain Society Meeting, Chicago, IL. 2003.
32. Eguiluz V, Cecchi G., Chialvo DR, M Baliki, Y Sosa, AV Apkarian. Analysis of brain activity as a massively interconnected dynamical network using fMRI. Society for Neuroscience Meeting 2003, New Orleans, LA.
33. Berra H, Lavarello S, Chialvo DR, Baliki M, AV Apkarian. From acute to chronic pain state in chronic constriction injury rats. Society for Neuroscience Meeting 2003, New Orleans, LA.
34. Eguiluz VM., Chialvo DR, Cecchi G, Baliki M, Apkarian AV. Scale-free brain functional networks. Organization for Human Brain Mapping 10th Annual Meeting, Budapest, Hungary,

June 13-17, 2004

35. Plenz D, Stewart CV, Wakeling J, Chialvo D, Greenberg DS Neuronal avalanches and synfire chains governed by power laws in balanced cortical networks 34rd. Annual Meeting Society for Neuroscience San Diego, CA. USA 22-26 Oct, 2004 Society for Neuroscience Abstracts 970.2
36. Lavarello S, Randolph A, Berra HH, Geha P, Jabakhanji R, Baliki MN, Del Rey A, Besedovsky HO, Chialvo D.R., Apkarian A. Pain and central cytokines in two animal models of chronic neuropathic pain, 34rd. Annual Meeting Society for Neuroscience, San Diego, CA. USA 22-26 Oct, 2004 Society for Neuroscience Abstracts 518.13
37. Geha P, Calvo OA, Harden NR, Paice J, Parrish TB, Chialvo DR, Apkarian A. An fMRI-pharmacological study of modulation of chronic PHN pain by topical lidocaine. 34rd. Annual Meeting Society for Neuroscience San Diego, CA. USA 22-26 Oct, 2004, Society for Neuroscience Abstracts, 295.8
38. Scremin OU, T. Shih, L. Huynh, M. Roch, W. Sun, D.R. Chialvo, D.J. Jenden, Heart rate regulation after exposure to low dose sarin and pyridostigmine bromide. 34rd. Annual Meeting Society for Neuroscience San Diego, CA. USA 22-26 Oct, 2004 Society for Neuroscience Abstracts.
39. Foss JM, DR Chialvo, PY Geha, MN Baliki, RM Jabakhanji, AV Apkarian, Dynamics of pain: distinctive features of ongoing chronic pain ratings revealed by nonlinear análisis. 34rd. Annual Meeting Society for Neuroscience San Diego, CA. USA 22-26 Oct, 2004 Society for Neuroscience Abstracts
40. Millecamps M, RI Jabakhanji, S Lavarello, DR Chialvo, AV Apkarian, D-cycloserine, a glycine agonist of NMDA receptor, acts as an analgesic in neuropathic rats. 34rd. Annual Meeting Society for Neuroscience San Diego, CA. USA 22-26 Oct, 2004 Society for Neuroscience Abstracts
41. Geha PY, JA Katz, R Jabakhanji, DR Chialvo, AV Apkarian. Brain activity for osteoarthritis pain: an fMRI pharmacological study. Organization for Human Brain Mapping 11th Annual Meeting, Toronto, Ontario, Canada, June 12-16, 2005
42. Geha PY, NR Harden, JA Paice, MN Baliki, TB Parrish, DR Chialvo, AV Apkarian. Brain activity for modulation of allodynia by topical lidocaine in post-herpetic neuropathy. Organization for Human Brain Mapping 11th Annual Meeting, Toronto, Ontario, Canada, June 12-16, 2005
43. Geha PY, NR Harden, JA Paice, MN Baliki, TB Parrish, DR Chialvo, A V Apkarian Brain activity for modulation of spontaneous pain by topical lidocaine in post-herpetic neuropathy. Organization for Human Brain Mapping 11th Annual Meeting, Toronto, Ontario, Canada, June 12-16, 2005
44. Lopera A, Buldú JM, Chialvo D, Torrent MC and García-Ojalvo J, Resonancia fantasma en circuitos de Chua acoplados, XIII Congreso de Física Estadística FisEs05, Madrid, Spain, 27-29 June 2005.
45. Eguiluz V, Chialvo DR, Cecchi G, Baliki M, AV Apkarian. Scale-free brain functional networks. XIII Congreso de Física Estadística FisEs05, Madrid, Spain, 27-29 June 2005.
46. Baliki MN, Chialvo DR, Apkarian AV. Brain activity differences between back pain patients and healthy subjects for acute thermal pain. Washington, DC: Society for Neuroscience, 2005.
47. Apkarian AV, PY Geha, Katz JA, Schnitzer TJ, Jabakhanji RI, Berra HH, Chialvo DR. Brain

- activity for stimulating the painful knee in osteoarthritis contrasted brain activity for back pain, and acute thermal pain. Washington, DC: Society for Neuroscience, 2005
48. Jabakhanji RI, Foss JM, Berra HH, Chialvo DR, Apkarian AV. Automated thermal and motoric operant tasks differentiate between inflammatory and neuropathic animals. Washington, DC: Society for Neuroscience, 2005
 49. Foss JM, Apkarian AV, Chialvo DR. Beyond correlations: functional connectivity from multivariate granger causality in fMRI signals. Washington, DC. Society for Neuroscience, 2005.
 50. Cecchi GA , Rao AR, Chialvo DR & Apkarian AV. Efficient distributed algorithms for pattern detection in graphs derived from fMRI measurements. Org. Human Brain Mapping 12th Annual Meeting, 2006 Florence, Italy.
 51. Centeno MV, Geha PY, Apkarian AV, Katz JA, Baliki MN, Chialvo DR. Brain Activity for Osteoarthritis Pain: an fMRI Study. Atlanta, GA. Society for Neuroscience, 2006
 52. Geha PY, Narang A, Baliki MN, Harden NR, Bauer W, Chialvo DR, Apkarian AV. Fractional anisotropy of white matter tracts contrasted between complex regional pain syndrome and normal controls. Atlanta, GA. Society for Neuroscience, 2006.
 53. Apkarian A V, Rudick CN, Centeno MV, Chialvo DR. Emotional learning and memory deficits in a neuropathic pain rat model. Atlanta, GA. Society for Neuroscience, 2006.
 54. Baliki MN, Geha PY, Apkarian AV, Chialvo DR. So, what brain areas are specific for pain perception? Atlanta, GA. Society for Neuroscience, 2006.
 55. Perotti JI, Billoni OV, Tamarit FA, Chialvo DR, Cannas SA, Estabilidad dinamica en redes complejas. Annual Meeting Argentinian Physics Society, AFA San Luis, Argentina (2006).
 56. Geha PY, Baliki MN, Bauer W, Harden N, Chialvo DR, Apkarian AV. Fractional anisotropy of white matter tract contrasted between complex regional pain syndrome and normal controls (Poster #175 W-AM) Org. Human Brain Mapping, 13th Annual Meeting, 2007 Chicago, USA.
 57. Baliki MN, Geha PY, Chialvo DR, Apkarian AV. Dissociating nociception from magnitude rating in the human brain. (Poster #168 W-PM) Org. Human Brain Mapping 13th Annual Meeting, 2007, Chicago, USA.
 58. Baliki MN, Geha PY, Apkarian AV, Chialvo DR. Impaired brain de-activation in chronic pain, Society for Neuroscience, San Diego, 2007. Poster 825.2/II19.
 59. Montoya P, Geha PY, Baliki MN, Apkarian AV, Chialvo DR, Differences in the temporal dynamics of daily activity between chronic pain patients and healthy controls. Society for Neuroscience, San Diego, 2007. Poster 70.11/DD3.
 60. Apkarian AV, Geha PY, Baliki MN, Centeno, MV, Harden RN, Parrish T., W Bauer, Chialvo DR. Grey and white matter changes in patients with complex regional pain syndrome. Society for Neuroscience, San Diego, 2007. Poster 285.15/JJ25.
 61. Fraiman D, Balenzuela P, Chialvo DR. Redes funcionales en el punto critico: similitudes entre dinamica cerebral y el modelo de Ising. Asociación Argentina de Física . Buenos Aires, 2008.
 62. Chialvo DR. Brain Resting State is critical. Society for Neuroscience, Washington DC, 2008.

Poster 798.5/UU90.

63. Plenz D, Chialvo DR. Scaling of neuronal avalanches. Society for Neuroscience, Washington DC, 2008. Poster
64. Scremin OU, Chialvo DR, Lavarello S, Lucero MA. Altered cortical dynamics in Endosulfan exposed rats. Society for Neuroscience, Chicago IL, 2009. Poster.
65. Chialvo DR, Budelli, R, Caputi A, Lavarello S. A model for the neural basis of tonal consonance. Society for Neuroscience, Chicago IL, 2009. Poster.
66. Cifre I, Fraiman D, Balenzuela P, Apkarian A, Chialvo DR. Global and local properties of brain resting state networks in chronic pain. Society for Neuroscience, Chicago IL, 2009. Poster.
67. Cifre I, Sitges C, Muñoz-García MA, Larbig W, Fraiman D, Balenzuela P, Birbaumer N, Chialvo DR, Montoya P. Altered resting state networks dynamics in fibromyalgia. Society for Neuroscience, Chicago IL, 2009. Poster.
68. Ribeiro TL, Ribeiro S, Caixeta F, Belchior H, Chialvo DR, Nicolelis MAL, Copelli M. Neuronal Avalanches: Scaling, Power Laws and Undersampling in Freely Behaving and Anesthetized Rats. XXIV Reunião Anual da FeSBE (Federacao de Sociedades de Biologia Experimental), Águas de Lindóia, SP- Brasil (19/08/2009 a 22/08/2009). Poster 08.012.
69. Chialvo DR, Montoya P, Malagrava J, Garcia-Banda G. Diferencias individuales en salud y enfermedad: un modelo de contingencia. Poster, Spanish Research Society of Individual Differences (SEIDI) XI Meeting. Mallorca Spain, October 8, 2009.
70. Zirovich MD, Tagliazucchi E, Victor TL, Fraiman D, Balenzuela P, Scremin OU, Chialvo DR, Resting brain functional connectivity is disrupted in chronic back pain patients. Society for Neuroscience, San Diego CA, 2010. Poster 60.8/W13.
71. Chialvo DR, Fraiman D. Optimal information-sharing in brain resting state networks. Society for Neuroscience, San Diego CA, 2010. Poster 109.5/MMM64.
72. Chialvo DR, Tagliazucchi E, Fraiman D, Balenzuela P, Point process analysis of brain resting fMRI dynamics reveals scale-free avalanches. Society for Neuroscience, Washington DC, 2011. Poster 398.01/XX7.
73. Fraiman D, Tagliazucchi E, Balenzuela P, Muñoz MA, Montoya P, Chialvo DR, A nonlinear measure of fmri functional connectivity based on resting bold event triggered averages (rbeta). Society for Neuroscience, Washington DC, 2011. Poster 398.12/XX18.

F) PATENTES:

“Interface for sound processing for cochlear implants in humans” by DR Chialvo and AV Apkarian. On file at the SUNY Office of Technology Transfer, Albany, N.Y. (Invention number R0950-211)

“Apparatus and method for pain measurement” U.S. Patent Application 20060129069. AV Apkarian and DR Chialvo.

IMPACTO RECIENTE EN PRENSA :

- Comentarios del artículo Baliki et al. Journal of Neuroscience (2008). "Beyond feeling: chronic pain hurts the brain disrupting the default-mode network dynamics". (Una selección sobre cientos que pueden ser consultados en www.chialvo.net/Press).

1. Reuters US:

<http://www.reuters.com/article/healthNews/idUSN0521570320080205>

2. MSNBC:

<http://www.msnbc.msn.com/id/23017866/>

3. ABC News, Health:

<http://abcnews.go.com/Health/WireStory?id=4246223&page=1>

4. Washington Post:

<http://www.washingtonpost.com/wpdyn/content/article/2008/02/08/AR2008020802285.html>

5. Medscape Medical News:

www.medscape.com/viewarticle/569851

6. Nature Reviews Neuroscience:

<http://www.nature.com/nrn/journal/v9/n3/full/nrn2352.html#Pain>

7. Times of India:

http://timesofindia.indiatimes.com/Chronic_pain_can_alter_the_brain/rssarticleshow/2762925.cms

8. China Daily:

http://www.chinadaily.com.cn/world/2008-02/17/content_6460673.htm

9. Reuters, America Latina:

<http://lta.reuters.com/article/worldNews/idLTAN0626716720080206>

10. Clarín (Argentina):

<http://www.clarin.com/diario/2008/02/10/sociedad/s-04101.htm>

- Comentarios sobre Criticality and Brain function:

1. National Geographic News:

"Dominoes, Avalanches Give Insight Into Brain Function" by John Roach (November 6, 2006)
<http://news.nationalgeographic.com/news/2006/11/061106-brain-cascade.html>

- Comentarios sobre el artículo Chialvo DR. "How we hear what isn't there: a neural mechanism for the missing fundamental illusion". *Chaos*, 13(4) 1226-1230 (2003)
1. Hearing ghosts, Phillip Ball, *Nature*, 425, 914, (2003).
 2. Juegos matemáticos. La frecuencia fantasma. JMR Parrondo, *Investigación y Ciencia* (Spanish Edition of *Scientific American*, January 2004).
- Comentarios del artículo Eguiluz et al. "Scale-free brain functional networks". *Phys. Rev. Letters* 94, 018102 (2005) :
1. 2005-01-5. MSN NBC (USA). "How your brain is like the Internet. Mind's geography traces classic network pattern"
 2. 2005-01-16. *Science Daily* (USA). "Magnetic Resonance Imaging Deconstructs Brain's Complex Network".
 3. 2005-01-16. *Clarín*, Buenos Aires, Argentina. "Nueva tecnica de imagenes "
 4. 2005-01-14. *Ultima Hora*, Madrid, Spain. "Brain areas have similarities with other networks"
 5. 2005-01-16. *Diario de Mallorca*, Mallorca Spain. "New imaging technique".
 6. 2005-01-5. *Innovations report*, Germany. "Magnetic resonance imaging deconstructs brain's complex network".
 7. 2005-01-5. *Medical News Today*, UK - "Magnetic resonance imaging deconstructs brain's complex network"

SEMINARIOS INVITADOS Y CONFERENCIAS PLENARIAS TALKS (DESDE 1996)

1. September 30, 1996: Plenary Talk "Maps in our heads: Self-organization of topology-preserving maps". XI Conference on Nonequilibrium Statistical Mechanics and Nonlinear Physics Conference (MEDYFINOL'96), MEDYFINOL 96, University of Tucuman, San Miguel de Tucuman, (Rep. Argentina) .
2. October 11, 1996: Universidad Favaloro, Buenos Aires (Rep. Argentina) "Maps in our heads: Self-organization of topology-preserving maps".
3. October 10, 1996: Physics Department Colloquium, School de Exact and Natural Sciences. University of Buenos Aires. "Self-organization in brain maps. Experiments and theory."
4. November 14, 1996: Center for Studies in Physics and Biology. The Rockefeller University, NY, USA. "Maps in our heads: Self-organization of topology-preserving maps" .

1997

5. April 4, 1997: "What do brains compute?" Annual Computational Neuroscience Symposium.

Speakers: Dante Chialvo, Per Bak, Teuvo Kohonen, J Field, D Ballard. Organized by the Computational Neuroscience Program, Syracuse University and SUNY Health Science Center at Syracuse 4-5 April 1997, Syracuse, NY, USA.

6. April 8, 1997: Invited Speaker. Plenary Talk. "Fractal 97, Fractals in the Natural and Applied Sciences" 4th International Multidisciplinary Conference Denver, Colorado, USA. "Mapping sameness into neighborliness".
7. July 20, 1997: Niels Bohr Institute. Copenhagen, Denmark. Physics Colloquium. "Learning from mistakes".
8. August 3, 1997: Höchstleistungsrechenzentrum HLRZ, Forschungszentrum Jülich , Germany. (P. Grassberger's lab) "What we don't know and we should know about brains?"
9. September 1997: Center for Studies in Physics and Biology. The Rockefeller Univ., NY, USA. "Learning from Mistakes".
10. October 1997: McGill University. Montreal, Quebec, Canada. "Learning from mistakes could be critical and self-organized." Centre for Nonlinear Dynamics in Biology and Medicine, Colloquium.
11. October 1997: Cornell University, Ithaca, NY. Physiology Colloquium. "Learning and self-organization".
12. October 1997: NEC Research Institute. Princeton. NJ. "Dynamical consequences of dendritic nonlinear conductances."
13. November 1997: SUNY Health Science Center at Syracuse, NY. Physiology and Neuroscience Colloquium, "Learning from mistakes".

1998

14. January 10, 1998: SUNY Health Science Center at Syracuse, NY. Neurosurgery Research Day. Special Invited Lecture. "Learning from mistakes".
15. April 8, 1998: Penn State University. State College, PA. Center for Gravitational Physics and Geometry, Special Seminar. "Learning from Mistakes".
16. May 9, 1998: Arcidoso, (Toscana), Italy. International conference on stochastic resonance in biology. "Criticality in excitable systems. Who started the fire?"
17. September 14, 1998: Municipal Council of Rafaela (Santa Fe) Rep. Argentina. "Complexity in Nature"
18. September 14, 1998: High School Luisa R. de Barreiro (EEM N° 428, ex "Colegio Nacional de Rafaela"), Rafaela, (Santa Fe), Rep. Argentina. Special Class: "Doing Science".
19. September 25, 1998: Universidad Favaloro. Buenos Aires (Rep. Argentina) Colloquium in Biophysics. "Reading a neural code".
20. September 28, 1998: Colloquium, Physics Department. School of Exact and Natural Sciences. University of Buenos Aires. (Rep. Argentina) "Dynamical systems: complex, complicated or

confused?"

1999

21. June 14, 1999: "Self-organized memory in extended systems". Niels Bohr Institute. Copenhagen, Denmark. Colloquium.
22. October 1-11, 1999: "The dynamics of complex systems", Post-graduate course. School of Exact Sciences and Technology. National Univ. of Tucuman, San Miguel de Tucuman. Argentina.
23. October 16, 1999: Plenary Talk, "Noise Induced Memory", VI Latin American Workshop on Nonlinear Phenomena, (LAWNP'99) and XII Conference on Nonequilibrium Statistical Mechanics and Nonlinear Physics Conference (MEDYFINOL'99), Huerta Grande. Cordoba. Argentina.
24. October 24-27, 1999: "The dynamics of complex systems", Post-graduate course. PhD Program in Biomedical Sciences. School of Medical Sciences. Univ. Nacional de Rosario. Rosario. Argentina.

2000

25. April 13, 2000: "Biological learning: Beyond Hebb ideas", Georgia Institute of Technology. Atlanta, GA.
26. June 19, 2000: "Self-organization of ants' trails", Cross-Disciplinary Physics Department IMEDEA, Institut Mediterrani d'Estudis Avançats (Mediterranean Institute for Advanced Studies), University of the Balearic Islands (UIB), Palma de Mallorca, Spain.
27. July 10, 2000: "Pitch perception revisited" Cross-Disciplinary Physics Department IMEDEA, Institut Mediterrani d'Estudis Avançats (Mediterranean Institute for Advanced Studies), University of the Balearic Islands (UIB), Palma de Mallorca Spain.
28. October 20, 2000: "Nonlinear pitch perception". Physiology Dept. Northwestern Med. School. Chicago IL.
29. October 24, 2000: "Revisiting the problem of pitch perception", McGill University. Physiology, Montreal, Quebec, Canada. Centre for Nonlinear Dynamics in Biology and Medicine.
30. October 31, 2000: "Nonsense sounds created by our nonlinear senses", Physiology Colloquium. Physiological Sciences Dept, Cornell University, Ithaca N.Y.

2002

31. January 20, 2002: "Per Learning", Santa Fe Institute. Santa Fe, NM.
32. April 24, 2002: "Issues in Complexity and Emergence". Institute of Pure and Applied Mathematics, UCLA. Los Angeles, CA.

33. May 3, 2002: "The Equations of E-motion". International Symposium "Modeling complex biophysical processes". Colonia, Uruguay.
34. May 5, 2002: "A neural mechanism for the missing fundamental illusion and the perception of pitch". Dept. of Physiology, University of Montevideo, Uruguay.
35. May 7, 2002: "Illusory synchronization". University of Rosario. Medical School, Rosario, Argentina.
36. June 3, 2002: "The auditory perception of pitch and illusory phase-locking". Biocomp 2002, Vietri sur Mare, Italy.
37. June 18-27, 2002: Invited Lectures in the European Interdisciplinary School on Nonlinear Dynamics for System and Signal Analysis, EUROATTRACTOR2002, Warsaw, June 18 to June 27, 2002, Institute of Biocybernetics and Biomedical Engineering, Polish Academy of Sciences.
38. July 18, 2002: "Excitable Systems" Cross-Disciplinary Physics Department IMEDEA, Institut Mediterrani d'Estudis Avançats (Mediterranean Institute for Advanced Studies), University of the Balearic Islands (UIB), Palma de Mallorca Spain.
39. July 22, 2002: "What nonlinear physics can do for cardiology". Cardiology Dept., Hospital Son Dureta, Palma de Mallorca, Spain.
40. July 30, 2002: "Exploraciones matemáticas del dolor crónico" Cross-Disciplinary Physics Department IMEDEA, Institut Mediterrani d'Estudis Avançats (Mediterranean Institute for Advanced Studies), University of the Balearic Islands (UIB), Palma de Mallorca, Spain.
41. September 3, 2002: "Subharmonic Stochastic Resonance: a Neural Mechanism for the Missing Fundamental Illusion and the Perception of Pitch", UPON 2002 Int. Conference on Unsolved Problem of Noise. National Institute of Health Campus (NIH). Bethesda, MD.
42. October 8, 2002: "Ghost resonance, how brain can see what isn't there". National Institute of Health Campus (NIH). Bethesda, MD.
43. October 22, 2002: "Ghost stochastic resonance: A neural mechanism for the missing fundamental illusion". House Ear Institute, Los Angeles, CA.
44. November 29, 2002: "Ghost resonances in Physics and Biology", Faculty of Technical Physics, Helsinki Univ., Finland.
45. December 9-13, 2002: "Modeling nonlinear aspects of perception and emotion". Invited plenary talk, XIII Conference on Nonequilibrium Statistical Mechanics and Nonlinear Physics. Colonia, Uruguay.

2003

46. February 7, 2003: "Modeling brain perception". Univ. Southern California, Information Sciences Institute, Marina del Rey, CA.
47. April 23, 2003: "El dolor no sólo duele, también lastima" University of Rosario Medical School, (Rep. Argentina)

48. April 29, 2003: Colloquium, Physics Department. School of Exact and Natural Sciences. University of Buenos Aires. (Rep. Argentina). "Sobre emociones, dolor y placer".
49. June 24, 2003: "Nonlinear processes in the heart" Cross-Disciplinary Physics Department IMEDEA, Institut Mediterrani d'Estudis Avançats (Mediterranean Institute for Advanced Studies), University of the Balearic Islands (UIB), Palma de Mallorca, Spain.
50. July 9, 2003: "Complexity and Criticality in Networks". Workshop on Complexity and Criticality, Computational Neuroscience Meeting CNS 2003, University Miguel Hernández, Alicante, Spain
51. August 8, 2003: "Complexity in brain networks". Talk and roundtable in the "Curso sobre Emoción y Cerebro". Universidad Complutense de Madrid. El Escorial. Spain.
52. August 22, 2003: "Brain complexity". Niels Bohr Summer Institute on Complexity and Criticality. A workshop honoring late Prof. Per Bak. Copenhagen, Denmark.
53. August 25, 2003: "How we can hear what isn't there". Niels Bohr Summer Institute on Complexity and Criticality. A workshop honoring late Prof. Per Bak. Copenhagen, Denmark.
54. September 23, 2003: "How sensory neurons code what isn't out there". 5th International Workshop in Neuronal Coding 2003, Aulla, Tuscany, Italy.
55. October 9, 2003: Colloquium "Complexity of brain networks". Physics Dept. University of Houston, Houston, USA.
56. October 27, 2003: "Brains are critical". Mathematics Dept., Harvey Mudd College, Claremont, CA, USA.
57. November 19, 2003: "Scale-free brain networks". Dept de Fisica, Universidad de las Islas Baleares, Palma de Mallorca. Spain.
58. November 21, 2003: "How sensory neurons see what is not there". Physiology Dept., Marburg University. Marburg, Germany.
59. November 25, 2003: "Brain networks", Dipartimento di Fisica, Università di Roma "La Sapienza" Rome, Italy.
60. November 27, 2003: "Critical brains", Departament de Fisica Fonamental, Universitat de Barcelona, Barcelona, Spain.
61. December 9, 2003: Scale-free brain functional networks". Electrical Engineering Department, UCLA. Los Angeles, CA.

2004

62. March 3, 2004: "Scale free brain networks" Invited Lecture for the Inaugural Symposium of the Natal Neuroscience Institute, Natal. Brazil.
63. March 9, 2004: "Critical brain networks", Physics Department. School of Exact and Natural Sciences. University of Buenos Aires, Buenos Aires, Argentina.

64. Mayo 12, 2004: "Scale free brain functional networks", Facultad de Astronomia Matematica y Fisica, University of Cordoba, Argentina
65. Mayo 14, 2004: "Complex networks in biology and medicine", Physics Dept., Univ. of Rosario, Rosario, Argentina.
66. May 22, 2004: "Brain networks". Symposium celebrating Frank Moss 70th birthday. Institute of Biology of the Humboldt University, Berlin, Germany.
67. June 14, 2004: "Ghost Resonances in sensory systems". Univ. Politecnica de Cataluña, Terrazas, Spain.
68. August 2, 2004: "Simplificando los sistemas complejos". Introductory lecture for the Summer Course in Complex Systems: Mente y Complejidad., Universidad Complutense. El Escorial. Spain.
69. October 22, 2004: "Avalanches and brain networks". Mini-Conference at University of Missouri St. Louis Celebrating Frank Moss's 70th Birthday, UMSL, St. Louis, Missouri.
70. December 6-10, 2004: "Scale free brain networks". Plenary Talk MEDYFINOL'04 XIV Conference on Nonequilibrium Statistical Mechanics and Nonlinear Physics, La Serena, Chile.

2005

71. March 11, 2005: BSI Forum "De-constructing brain functional networks", Riken Brain Science Institute. Perceptual Dynamics Laboratory, Saitama, Japan.
72. March 14, 2005: "Critical Brain networks", Kaneko Lab, Department of Pure and Applied Sciences, Tokyo University, Komaba-Todai-Ma, Japan.
73. March 16, 2005: BSI Forum "Perception can be an objective illusion: the case of ghost resonances in auditory and visual sensory systems", Riken Brain Science Institute. Perceptual Dynamics Laboratory, Saitama, Japan.
74. March 29, 2005: "Brain segregation-integration or just plain phase transition?" Complex System Group ICREA, (Catalan Institute for Research and Advanced Studies), Universitat Pompeu Fabra, Barcelona, Spain.
75. March 31, 2005: "Critical brain networks" Service Hospitalier Frédéric Joliot, Département de Recherche Médicale du CEA, Orsay, France.
76. April 20-22, 2005: "Self-organization of scale free brain networks". Invited Plenary Talk. Los Alamos National Laboratory. Workshop on Collectives formation and specialization in biological and social systems, Santa Fe, New Mexico.
77. May 6, 2005: "Critical brain networks". Colloquium. IGERT, Interdisciplinary Nonlinear Seminar. Northwestern Univ. Evanston, IL, USA.
78. June 15-18, 2005: "Rhythms, Dynamics and Avalanches" Plenary Talk, Rhythms Sleep & Learning Workshop. University of Rio Grande do Norte, Natal, Brazil.

79. July 19, 2005: "The abc of fMRI analysis" Psychology Department, University of the Balearic Islands (UIB), Palma de Mallorca, Spain.
80. July 26-August 1st, 2005: Invited Plenary Talk. "Critical brain networks". STOCHDYN "100 Years of theory on Brownian motion" celebrating the centennial of Einstein's work on Brownian motion. Ettore Majorana Center, Erice, Sicily, Italy.
81. August 8-12, 2005: Plenary Talk. International Summer Institute "Synchrony in Mind, Brain and Consciousness". Peter Wall Institute for Advanced Studies at the University of British Columbia in Vancouver, British Columbia, Canada.
82. September 7, 2005: Round Table, "Avances multidisciplinarios en neurofisiología cognitiva: Desde la percepción musical al canto de los pájaros". Congreso Argentino de Fonoaudiología, Rosario, Santa Fe, Argentina.
83. September 21-23, 2005: "Critical brain networks". Plenary Talk, SABI 2005, Meeting of the Sociedad Argentina de Bioingeniería, Paraná, Argentina.
84. September 28, 2005: Plenary Talk, "Critical brain networks". Argentinian Physics Society (AFA) Annual Meeting, La Plata, Argentina.
85. October 8-9, 2005: Invited Talk. European follow-up of the Peter Wall Institute "Synchrony in Mind, Brain and Consciousness". University Paris Sorbonne, France.
86. October 26, 2005: "Critical brain networks". Plenary Talk VIII Latin American Workshop on Nonlinear Phenomena, LAWNP05, Bariloche, Argentina.
87. October 28, 2005: "Perception, objective illusions and ghost resonances in auditory and visual sensory systems". Series of Public Lectures Celebrating the 50th Aniversary of the Instituto Balseiro, Bariloche, Argentina.
88. December 1, 2005: Invited Colloquium. "How and why to study fluctuations in neural systems". 2005 Argentine School of Neuroscience IBRO /INMHA Advanced School Receptors, Channels, and Synapses" INGEBI (CONICET), Buenos Aires, Argentina.
89. December 7, 2005: First Argentine School of Mathematics and Biology. Argentine National Program BIOMAT, National University of Córdoba, La Cumbre, Córdoba, Argentina. (Cancelled due to scheduling conflict)
90. December 12-16: Invited Plenary Talk. "BIOCOMP2005: Diffusion processes in neurobiology and subcellular biology". Vietri sul Mare, Italy. (Cancelled due to scheduling conflict).

2006

91. March 3, 2006: Public Lecture "Brain Complexity" Cicle de Conferences "Cervell Conducta i Societat" Universitat de les Illes Balears i Fundacio "La Caixa", Palma de Mallorca, Mallorca, Spain.
92. April 5, 2006: "Critical aspects of brain function". Computation in Physics Colloquium, James Franck Institute, University of Chicago, Chicago.
93. July 17-21, 2006: Meeting on Constructive Role of Noise in Complex Systems (Seminar and

Workshop: June 26 - July 21, 2006) at the Max-Planck Institute for Physics of Complex in Dresden (Cancelled due to scheduling conflict)

94. September 7, 2006: Invited Colloquium. "How and why to study fluctuations". Physiology Department, Scholl of Pharmacy, University of Barcelona, Barcelona. Spain.
95. September 11-15, 2006: 9thGranada Seminar in Computational and Statistical Physics. Organized by the Institute "Carlos I" for Theoretical and Computational Physics, University of Granada. Spain. Computational and Mathematical Modeling of Cooperative Behavior in Neural Systems.
96. September 25-29, 2006: Twelve Lectures in the V Curso Boliviano de Sistemas Complejos (with emphasis on Neuroscience). Organized by Carrera de Física, Universidad Mayor de San Andrés, La Paz, Bolivia.
97. December 1, 2006: Physics Colloquium. Dept. of Physics and Astronomy, University of Missouri, Saint Louis (UMSL) (Cancelled due to bad weather).
98. December 4-6, 2006: Plenary Talk. XV Conference on Nonequilibrium Statistical Mechanics and Nonlinear Physics (MEDYFINOL'06). Mar del Plata, Argentina.
99. December 14-16, 2006: Plenary Talk "Where in the world is the brain?". Workshop on "Embodying cognition: Towards an integrated approach", Department of Psychology, Universitat de les Illes Balears, Palma de Mallorca, Spain.
100. December 18, 2006: "Critical Brain Networks", Biophysics Colloquium. Radboud University, Nijmegen. The Netherlands.

2007

101. February 4-14, 2007: Two invited lectures in the "Second Latin-American School on Statistical Physics and Interdisciplinary Applications" organized by the UFRGS's Complex Fluids group (Brazil) and the ICTP (Trieste, Italy), Bento Gonçalves, Brazil.
102. February 21, 2007. Defense Department Advance Research Program (DARPA) HAND Meeting, Defense Science Office, Arlington, Virginia. What is next in advanced brain research?
103. May 16, 2007: Complexity without complications. Psychology Department. Universidad Complutense, Madrid, Spain.
104. September 24-28, 2007: Invited Plenary Talk. BIOCOMP2007 - Collective Dynamics: Topics on Competition and Cooperation in the Biosciences. Vietri sul Mare, Italy.
105. October 11-13, 2007: Invited Plenary Talk. Computational philosophy: lessons from simple models. Niels Bohr Institute, Copenhagen, Denmark.
106. October 19, 2007: Colloquium. Life Sciences Interface Chair. Southampton University, UK.
107. November 3-7, 2007: Plenary Talk. 8th International Workshop in Neural Coding 2007. Montevideo, Uruguay.
108. November 16, 2007: Colloquium. Physics, The Frank and Elaine Moss Hospitality Fund

Distinguished Lecture Series. University of Saint Louis, Missouri, 2007. (Cancelled).

2008

109. April 11, 2008: Invited Colloquium. How is that the brain works? Instituto de Biología y Medicina Experimental, (IByME). Buenos Aires, Argentina.
110. June 24, 2008: Invited Colloquium, The brain: What is critical about it? Institute for Mathematical Sciences. Complexity Science Seminar Series. Imperial College, London, UK.
111. August 17-21, 2008: Invited Speaker. Stochastic Resonance 2008 International Conference. Perugia, Italy.
112. September 4, 2008: Invited Lecture at the "The physics and computational aspects of neural coding" Symposium. IBRO, NEUROLATAM I. First Ibero-Latin-American and Caribbean Meeting on Neuroscience. Buzios, Brazil.
113. December 1-4, 2008: Invited Speaker. XVI Conference on Non-Equilibrium Statistical Mechanics and Nonlinear Physics (MEDYFINOL'08). Punta del Este, Uruguay.
114. December 15, 2008: Invited Colloquium. Instituto Tecnológico Buenos Aires (ITBA), Buenos Aires, Argentina.
115. December 17, 2008: Invited Colloquium. "The brain is critical, and why should we care ". International Institute of Neuroscience, Natal , Brazil.
116. December 19, 2008: Invited Colloquium. "Reading the mind and understanding the brain, all at once". Physics Department. UFRP, Recife , Brazil.

2009

117. January 6, 2009: Invited Plenary Talk. "How critical is the brain: physics and computational aspects". XXXVIII Winter Meeting on Statistical Physics, Taxco, Guerrero, Mexico.
118. March 19, 2009: Invited Colloquium. "Brain's statistical physics". Swiss Institute of Technology, (ETH). Zurich.
119. March 25, 2009: Invited Lecture. "Brain's statistical physics". Institute for Mathematical Sciences. Imperial College, London, UK Meeting on Complexity and Networks. Neuroscience: Complexity analysis of signals.
120. August 25, 2009: Invited Lecture. "Beyond Feeling: how pain hurts the brain". Research Day, Physical Medicine & Rehabilitation, Veterans Administration, West LA, Los Angeles.
121. September 25, 2009: Invited Lecture. "Brain balance in health and disease", Psychology Dept. UIB, Mallorca, Spain
122. October 5, 2009: Invited Lecture. "Criticality and brain function". X Latin American Workshop on Nonlinear Phenomena, LAWNP09, Buzios, Brazil. (Canceled due to last minute schedule conflict)
123. November 13, 2009: Invited Colloquium. Experimental evidence of improved human performance with aging. Programa De-Volvamos, Profisio CIMA, UNR, Rosario. Argentina.

2010

124. January 10-13, 2010: Invited Speaker. Workshop on "Decision-Making models". University of North Texas, Denton, TX.
125. March 1-5, 2010: Invited Speaker. Brain Coordination Dynamics - an International Conference. Conference at Sea - Florida and Western Caribbean.
126. June 14-18, 2010: Invited Course "Neurociencia Computacional", Universidad de la Republica, Montevideo, Uruguay.
127. July 3-7, 2010: Invited Speaker Symposium on "Structure, dynamics and function in large scale neuronal ensembles" in the Forum of European Neurosciences (FENS 2010, Amsterdam).
128. September 13-17, 2010: Invited Speaker 11th Granada Seminar on Computational and Statistical Physics. La Herradura, Tropical Coast of Granada. Organized by the Institute "Carlos I for Theoretical and Computational Physics", University of Granada. Spain
129. September 21, 2010: Invited Lecture. "Novel non linear techniques of fMRI analysis", Psychology Dept. UIB, Mallorca, Spain
130. October 25, 2010: Chairman and Organizer. Workshop on "Neuroimágenes, dinámica cerebral y dolor". Facultad de Medicina, Universidad de Rosario, Rosario, Argentina.

2011

131. March 18-20, 2011: Invited Speaker. Workshop on "Brain Criticality". Physics, University of North Texas, Denton, TX.
132. April 14, 2011, Invited Speaker. 6th Annual NIH Pain Consortium Symposium. "Mechanisms and Management of Overlapping Chronic Pain and Associated Conditions". Natcher Auditorium. NIH Campus, Bethesda, USA.
133. April 15-16, 2011, Invited Discussant. "Collaborating with CTSA's to Advance Pain Research", Natcher Conference Center, NIH, Bethesda, USA.
134. April 18, 2011, Invited Speaker. "Lessons from atomic switches and neuron's synapses: universal dynamics across 20 orders of magnitude". California NanoSystems Institute, UCLA, Los Angeles, CA, USA.
135. May 5-7, 2011. Keynote Speaker. "New challenges in brain imaging of pain". VI Multidisciplinary Mediterranean Pain Forum & I European Multidisciplinary Pain Meeting, Menorca, Spain.
136. May 12-13, 2011. Invited Speaker. II International Symposium for the Study of Chronic Pain and Fibromyalgia, Universidad de las Islas Baleares. Palma de Mallorca, Spain.
137. June 23, 2011. Physics Colloquium. "Brain Physics and Mind Dynamics". Departamento de Física, Universidad de Buenos Aires, Argentina.
138. July 26, 2011, Physics Colloquium. "Criticality in brain physics & Mind dynamics". Institute for Cross-disciplinary Physics and Complex Systems, University of Islas Baleares, Mallorca

Spain.

139. July 27-28, 2011: Invited Speaker. Workshop on Noise and nonlinear dynamics in neural information processing (Honoring the late Frank Moss), Stockholm.
140. September 5-9, 2011: Invited Speaker, International Workshop on Nonlinear Physics and Applications, NOLPA2011, Joao Pessoa, Paraiba University, Brazil.
141. September 19-23, 2011. Plenary Speaker. "The physics of the brain". Bienal de Física de la Real Sociedad Española de Física, Palacio de La Magdalena de Santander, Spain.
142. September 26, 2011. Invited seminar. Point processes análisis of fMRI brain dynamics. Geneva Medical School - University of Geneva.
143. December 7, 2011. Invited seminar. "Como leer la mente y entender el cerebro." II Coloquio Internacional de Neurociencia, Psicología Cognitiva y Sociedad, Instituto Rosario de Ciencias de la Educacion, UNR/Conicet, Rosario, Argentina.

2012

144. March 26, 2012, Plenary Speaker. "La fisica del cerebro". Workshop organizado por la division de Fisica Medica de la Real Sociedad Española de Física, Madrid, Spain.
145. September 17-21, 2012, Plenary Speaker, Physics, Computation, and the Mind- Advances and Challenges at Interfaces. Granada Seminar. La Herradura, Spain.