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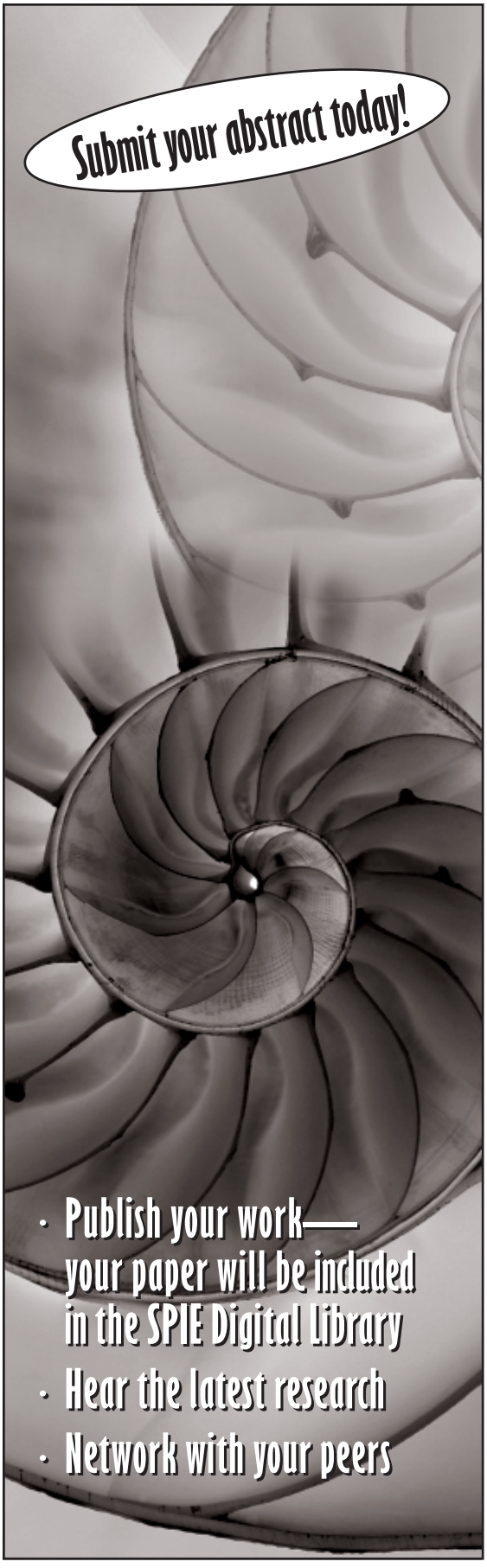

Second SPIE International Symposium on

Fluctuations and Noise

26–28 May 2004
Gran Hotel Costa Meloneras
Maspalomas, Gran Canaria, Spain

Symposium Chair
Laszlo B. Kish, Texas A&M Univ. (USA)

Symposium Co-chairs
Juan M. R. Parrondo, Univ. Complutense de Madrid (Spain)
Zoltán A. Rácz, Eötvös Univ. (Hungary)

Seven parallel conferences:

- **Fluctuations and Noise in Biological, Biophysical, and Biomedical Systems**
- **Noise and Fluctuations in Photonics and Quantum Optics**
- **Fluctuations and Noise in Materials**
- **Noise in Devices and Circuits**
- **Noise in Complex Systems and Stochastic Dynamics**
- **Noise and Information in Nanoelectronics, Sensors, and Standards**
- **Noise in Communication**

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Plan Now to Participate!

Spontaneous fluctuations (noise) underlie the most amazing and ubiquitous phenomena in both the physical and the biological worlds. The observed random time record of noise is carrying, in principle, an infinite amount of information about the system and its interactions with the environment. Noise limits the speed of information transfer and data manipulation; however, noise is also a treasure of information about a particular system. In many cases, especially in biology, the noise is more than a source of information and performs important functions. In communication and computing, noise is one of the ultimate factors of determining performance.

Every year over 16,000 scientific papers are published with noise(s) or fluctuation(s) keywords (SCI), and less than 10% of these papers address acoustical noise. The SPIE symposium series on Fluctuations and Noise (FaN) is trying to reach the impossible, to address this huge field with its seven parallel conferences. FaN is aiming to cover the most important fields of today's noise research, including biology, medicine, materials, magnetism, devices, circuits, optics, nonlinear systems, nanotechnology, quantum computing, communication, wireless, etc. Though many subject-specific conferences have been organized and there are some conference series with a narrower focus, FaN is the only meeting series to picture the global developments in the field.

The first symposium, FaN'03, was held in Santa Fe, NM, USA, in June 2003. With its 300+ contributed papers, the meeting was a great success, the largest meeting on noise and fluctuation processes so far.

It is a great pleasure to announce the Second SPIE International Symposium on Fluctuations and Noise to be held in Gran Canaria, Spain!

Symposium Chair
Laszlo B. Kish, Texas A&M Univ. (USA)

Symposium Co-chair
Juan M. R. Parrondo, Univ. Complutense de Madrid (Spain)

Symposium Co-chair
Zoltán Rácz, Eötvös Univ. (Hungary)

Plenary Presenters

Quantum Fluctuations and Life
Paul Davies, Macquarie Univ. (Australia)

Fluctuations Control Biomolecular Processes
Hans Frauenfelder, Los Alamos National Lab. (USA)

Quantum Noise and Quantum Communication
Anton Zeilinger, Univ. Vienna (Austria)

Featured Banquet Speaker

Juan M. R. Parrondo, Univ. Complutense de Madrid (Spain)

Advance Technical Program

The comprehensive technical program will list conferences, paper titles and authors in order of presentation; education program schedule, including course descriptions and instructor biographies; an outline of all planned special events and information detailing the hotel reservation process. To receive a Technical Program, available in March 2004, contact SPIE.

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All papers will be included in the SPIE Digital Library

Fluctuations and Noise in Biological, Biophysical, and Biomedical Systems (fno1)

Conference Chair: **Peter Hänggi**, Univ. Augsburg (Germany)

Cochairs: **Sergey M. Bezrukov**, National Institutes of Health (USA); **Andras Der**, Biological Research Centre of the Hungarian Academy of Sciences (Hungary)

Program Committee: **Jim Collins**, Boston Univ. (USA); **Franco Conti**, Istituto di Biofisica (Italy); **Robert S. Eisenberg**, Rush Medical Center (USA); **Hans Frauenfelder**, Los Alamos National Lab. (USA); **Hermann E. Gaub**, Technische Univ. Munchen (Germany); **Igor Goychuk**, Univ. Augsburg (Germany); **Frank Jülicher**, Max Planck Institut für Physik komplexer Systeme (Germany); **Peter Jung**, The Ohio State Univ. (USA); **Frank E. Moss**, Univ. of Missouri/St. Louis (USA); **Uli Nienhaus**, Univ. of Ulm (Germany); **Erich Sackmann**, Technische Univ. Munchen (Germany); **Klaus Schulten**, Univ. of Illinois at Urbana-Champaign (USA); **Mathias Winterhalter**, International Univ. Bremen (Germany); **Peter Wolynes**, Univ. of California/San Diego (USA)

Molecular biology, which enjoys the leading position in today's biological and medical research, is the science dealing mostly with "soft" nanoscale-sized objects existing at room temperature. Major cellular and inter-cellular processes are based on inherently random events whose statistics are severely limited by system size. Consequently, appreciation of the role of fluctuations in the dynamics of these objects is fundamental for our understanding of their functioning.

The general goal of the "Noise in Biological Systems" conference is double-fold. First, it is to promote the penetration of concepts and quantitative methods of physics into biological sciences and medicine. Second, it is to share the unique physical observations made possible due to the recent impressive progress in molecular biology with the community of physicists and engineers.

In addition to the statistical physics of various single bio-molecules and supra-molecular structures, the conference will cover exciting topics relating to the concepts of noise in different areas of neurophysiology, the constructive role of noise in sensory perception and sensory signal transduction, the role of noise and fluctuations in genetic regulation and gene expression.

Accepted papers will be published in the Proceedings of SPIE and extended selected papers may be published in a special issue of a scientific journal.

Access SPIE Web at www.spie.org/info/fn for an updated list of invited speakers.

Fluctuations and Noise in Photonics and Quantum Optics (fno2)

Conference Chair: **Peter Heszler**, Uppsala Univ. (Sweden)

Cochairs: **Derek Abbott**, The Univ. of Adelaide (Australia); **Julio Gea-Banacloche,** Univ. of Arkansas (USA)**; Philip R. Hemmer**, Texas A&M Univ. (USA)

Program Committee: **Mihaly G. Benedict**, Univ. of Szeged (Hungary); **Gennady Berman**, Los Alamos National Lab. (USA); **Samuel L. Braunstein**, Univ. of Wales at Bangor (United Kingdom); **Howard J. Carmichael**, Univ. of Auckland (New Zealand); **Carlton M. Caves**, Univ. of New Mexico (USA); **Aristide C. Dogariu**, Univ. of Central Florida (USA); **Jens S. Eisert**, Univ. of Potsdam (Germany); **Jorge García-Ojalvo**, Univ. Politechnica de Catalunya (Spain); **Gabriela I. Gonzalez**, Louisiana State Univ. (USA); **Guangcan Guo**, Univ. of Science and Technology of China (China); **Bei-Lok B. Hu**, Univ. of Maryland/College Park (USA); **Susanna F. Huelga**, Univ. of Hertforshire (United Kingdom); **Zsolt Kis**, Research Institute for Optics (Hungary); **Paul G. Kwiat**, Univ. of Illinois/Urbana-Champaign (USA); **Gerd Leuchs**, Friedrich-Alexander Univ. Erlangen-Nuernberg (Germany); **Hideo Mabuchi**, California Institute of Technology (USA); **Gerard J. Milburn**, Univ. of Queensland (Australia); **Martin B. Plenio**, Imperial College London (United Kingdom); **Maxi San Miguel**, Instituto Mediterraneo de Estudio Avanzados (Spain); **Jeffrey H. Shapiro**, Massachusetts Institute of Technology (USA); **Peter R. Smith**, Loughborough Univ. (United Kingdom); **Malvin C. Teich**, Boston Univ. (USA); **Rodney S. Tucker**, Univ. of Melbourne (Australia); **Howard M. Wiseman**, Griffith Univ. (Australia); **Amnon Yariv**, California Institute of Technology (USA); **Anton Zeilinger**, Univ. Vienna (Austria); **Peter Zoller**, Univ. Innsbruck (Austria)

This conference considers experimental and theoretical aspects of fluctuations and noise in optical, optoelectronic and photonic systems both in classical and quantum approach.

This conference considers experimental and theoretical aspects of fluctuations and noise in optical, optoelectronic and photonic systems both in classical and quantum approach.

Topics include:

- noise in photodetectors
- noise in lasers
- noise in fibers
- noise in photonic devices and systems
- noise in terahertz systems
- noise in ultrafast systems
- noise in soliton sources
- fluctuating phenomena and optical tweezers
- quantum noise
- vacuum fluctuations
- squeezed states
- gravitational wave detector noise issues
- noise in interferometric systems
- noise and quantum optics
- noise in quantum communication
- noise in quantum cryptography
- quantum information in noisy channels
- measurements of quantum noise
- decoherence and quantum coding
- noise in quantum information/games
- noise in quantum information processing and quantum measurements
- noise in quantum control
- quantum stochastic processes
- quantum non-linear dynamics
- noise and correlations in BEC.

Access SPIE Web at www.spie.org/info/fn for an updated list of invited speakers.

Important Dates!

Abstract Due Date: **13 October 2003**

Manuscript Due Date: **1 March 2004**

Proceedings will be published and available at the meeting. The abstract and manuscript due dates must be strictly observed.

Call for Papers

Fluctuations and Noise in Materials (fno3)

Conference Chair: **Dragana Popovic**, Florida State Univ. (USA)

Cochairs: **Michael B. Weissman**, Univ. of Illinois/Urbana-Champaign (USA); **Zoltán A. Rácz**, Eötvös Univ. (Hungary)

Program Committee: **Leticia F. Cugliandolo**, Ecole Normale Superieure de Paris (France); **Gianfranco Durin**, Instituto Elettrotecnico Nazionale Galileo Ferraris (Italy); **Nathan E. Israeloff**, Northeastern Univ. (USA); **James Kakalios**, Univ. of Minnesota (USA); **A. Shulim Kogan**, Retired (USA); **Edmund R. Nowak**, Univ. of Delaware (USA); **Miguel Ocio**, CEA Saclay (France); **Zvi Ovadyahu**, Hebrew Univ. (Israel); **Daniel E. Prober**, Yale Univ.; **Arup K. Raychaudhuri**, Indian Institute of Science (India); **Sergey L. Roumiantsev**, Rensselaer Polytechnic Institute (USA); **Peter Svedlindh**, Uppsala Univ. (Sweden); **Gergely Zimányi**, Univ. of California/Davis (USA)

This topical conference considers experimental and theoretical works on the use of noise to acquire information about material properties and transport processes.

Accepted papers will be published in the Proceedings of SPIE and extended selected papers may be published in a special issue of a scientific journal.

Papers are solicited on the following and related subjects:

- noise as a probe of glass transitions and glassy states
- noise in metal-insulator transitions
- shot noise as a probe of conduction mechanisms
- noise in domain dynamics: Barkhausen noise.

Confirmed invited and keynote talks include:

- "A consequence of local equilibration and heterogeneity in glassy materials," Ludovic Berthier, Univ. of Oxford (United Kingdom) and Univ. Montpellier (France)
- "Spatial structures and cooperative dynamics in models of glasses," Giulio Biroli, CEA Saclay (France)
- "Spatial and mesoscopic fluctuations in glassy dynamics," Claudio Chamon, Boston Univ. (USA)
- "Intermittency and aging in polymers and complex fluids," Sergio Ciliberto, Ecole Normale Supérieure de Lyon (France)
- "Intermittence and non-Gaussian fluctuations in the dynamics of jammed soft materials," Luca Cipelletti, Univ. Montpellier (France)
- "Low-frequency spin dynamics in cuprates," Nicholas Curro, Los Alamos National Lab. (USA)
- "Hysteresis, Barkhausen noise, disorder, and history induced critical behavior," Karin Dahmen, Univ. of Illinois/Urbana-Champaign (USA)
- "Quantum fluctuations and glassy behavior of electrons near metal-insulator transitions," Vladimir Dobrosavljević, Florida State Univ. (USA)
- "Slow dynamics and aging in the 2D Coulomb glass model," Daniel Grempel, CEA Saclay (France)
- "Extreme statistics of amplitude fluctuations in nonequilibrium steady states," Géza Györgyi, Eötvös Univ. (Hungary)
- "Noise in soft driven condensed matter," Jorge Kurchan, Ecole Supérieure de Physique et de Chimie Industrielles (France)
- "Resistance noise scaling in a dilute two-dimensional hole system in GaAs," Denis L'Hôte, CEA Saclay (France)
- "Towards experimental observation of full counting statistics of electron transport," Yuli Nazarov, Delft Univ. of Technology (Netherlands)
- "Low-frequency magnetic and resistance noise in magnetic tunnel junctions," Edmund Nowak, Univ. of Delaware (USA)
- "Spin glass order in high-TC cuprates – implications to physics and applications," Christos Panagopoulos, Univ. of Cambridge (United Kingdom)
- "Non-Gaussian conductance fluctuations at the metal-insulator transition in Si:P(B)," Arup Raychaudhuri, Indian Institute of Science (India)
- "Simulations of noise in inhomogeneous charged systems," Charles Reichhardt, Los Alamos National Lab. (USA)
- "Measurement of non-Gaussian shot noise – influence of the environment," Bertrand Reulet, Yale Univ. (USA)
- "Slow motion of inhomogeneities in strongly correlated electron systems," Jörg Schmalian, Iowa State Univ. (USA)
- "Theories of crackling noise," James Sethna, Cornell Univ. (USA)
- "Noise and aging in relaxor ferroelectrics," Michael Weissman, Univ. of Illinois/Urbana-Champaign (USA)
- "1/f noise and nonlinear effects in metal films and contacts: physics and applications," Gennadii Zhigal'skii, Moscow State Institute of Electronic Engineering (Russia)
- "Magnetization noise and its spectra in giant magnetoresistive multilayers," Jian-Gang Zhu, Carnegie Mellon Univ. (USA)
- "Characterizing hysteretic systems through fluctuation-histograms," Gergely Zimányi, Univ. of California/Davis (USA)

Noise in Devices and Circuits (fno4)

Conference Chair: **François Danneville**, Institut d'Electronique et de Microélectronique et de Nanotechnologie (France)

Cochairs: **Fabrizio Bonani**, Politecnico di Torino (Italy); **Jamal Deen**, McMaster Univ. (Canada); **Michael E. Levinshtein**, A.F. Ioffe Physico-Technical Institute (Russia)

Program Committee: **Alexander A. Balandin**, Univ. of California/Riverside (USA); **Francis Balestra**, Ecole Nationale Supérieure d'Elec et de Radioelec (France); **Carmine Ciofi**, Univ. degli Studi Messina (Italy); **Paul J. Edwards**, Univ. of Canberra (Australia); **Laurent Escotte**, LAAS-CNRS (France); **Leonard Forbes**, Oregon State Univ. (USA); **Laszlo B. Kish**, Texas A&M Univ. (USA); **Javier Mateos**, Univ. de Salamanca (Spain); **Bruno Neri**, Univ. di Pisa (Italy); **Fabien Pascal**, Univ. Montpellier II (France); **Matthias Rudolph**, Ferdinand-Braun-Institut fuer Hoechstfrequenztechn (Germany); **Michael S. Shur**, Rensselaer Polytechnic Institute (USA); **Lode J. K. Vandamme**, Technische Univ. Eindhoven (Netherlands)

This topical conference considers noise and fluctuations in devices and circuits. It covers both experimental and theoretical aspects of noise and fluctuations, experimental techniques and modeling and implementation issues in simulators. A tentative listing of the scope of the conference is given below.

Accepted papers will be published in the Proceedings of SPIE and extended selected papers may be published in a special issue of a scientific journal.

Papers are solicited on the following and related subjects:

- electronic devices and circuits - low frequency
- electronic devices and circuits - high frequency
- impact of geometrical down-scaling on device noise
- photonic devices and circuits
- emerging devices such as nanotubes, polymer devices etc.
- noise modeling - physical and circuit-based – in small and large signal operation
- amplitude modulation noise
- phase modulation noise
- noise in nanoelectronic devices
- noise in passive components
- noise measurements - practical considerations
- noise aspects in high speed digital circuits
- noise reduction techniques
- noise spectroscopy
- theoretical aspects of device and circuit noise computation
- RF MEMS.

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Confirmed invited talks include:

- "Noise in Si/SiGe and Ge/SiGe MODFET," Frédéric Aniel, Univ. de Paris Sud (France)
- "MOSFET noise modeling and parameter extraction," Manfred Berroth, Institute for Electrical and Optical Communications Engineering (Germany)
- "Characterization, modeling and implementation of high-frequency noise in MOSFETs for RF IC design," Chih-Hung Chen, McMaster Univ. (Canada)
- "Phase noise in oscillators as differential-algebraic systems with colored noise sources," Alper Demir, Koc Univ. (Turkey)
- "Low frequency noise in polycrystalline silicon thin-film transistors, C. A. Dimitriadis, Aristotle Univ. of Theessaloniki (Greece)
- "Simulation of cyclostationary noise in semiconductor devices," Simona Donati Guerrieri, Politecnico di Torino (Italy)
- "Accuracy assessment of compact RF noise models for SiGe HBTs by hydrodynamic device simulation," Christoph Jungemann, Stanford Univ. (USA)
- "Analysis of low frequency noise in GaN based HEMT technologies," Nathalie Labat, Univ. Bordeaux 1 (France)
- "1/f noise in deep submicron CMOS technology for RF and analog applications," A. Mercha, IMEC (Belgium)
- "Semiconductor device and noise sources modeling, design methods and tools, oriented to nonlinear HF oscillator CAD," Jean-Christophe Nallatamby, IRCOM (France)
- "Microwave Noise in III-V and SiGe based HBTs, comparison, trends, numbers," Paulius Sakalas, Dresden Univ. of Technology (Germany)
- "Noise in Schottky-barrier diodes: from static to large-signal operation," P. Shiktorov, Semiconductor Physics Institute (Lithuania)
- "Modelling of 1/f noise in heterostructure devices," Hilmi Ünlü, Instanbul Technical Univ. (Turkey)
- "Non-local effects and transfer fields for electronic noise in small devices," Luca Varani, Univ. Montpellier II (France)

Access SPIE Web at www.spie.org/info/fn for an updated list of invited speakers.

Important Dates!

Abstract Due Date: **13 October 2003**

Manuscript Due Date: **1 March 2004**

Proceedings will be published and available at the meeting. The abstract and manuscript due dates must be strictly observed.

Noise in Complex Systems and Stochastic Dynamics (fno5)

Conference Chair: **Zoltan Gingl**, Univ. of Szeged (Hungary)

Cochairs: **Jose M. Sancho**, Univ. de Barcelona (Spain); **Lutz Schimansky-Geier**, Humboldt Univ./ Berlin (Germany); **Janos Kertesz**, Technical Univ. of Budapest (Hungary)

Program Committee: **Vadim S. Anishchenko**, Saratov State Univ. (Russia); **Venkataraman Balakrishnan**, Indian Institute of Technology (India); **Gabor Balazsi**, Northwestern Univ. (USA); **Adi R. Bulsara**, Space & Naval Warfare Systems Command SYSCEN (USA); **François Chapeau-Blondeau,** Univ. d'Angers (France); **Charles R. Doering**, Univ. of Michigan (USA); **Mark I. Dykman**, Michigan State Univ. (USA); **Werner O. Ebeling**, Humboldt-Univ./Berlin (Germany); **Stephan Fauve**, Ecole Normale Superieure (France); **Hans Frauenfelder**, Los Alamos National Lab. (USA); **Nobuko Fuchikami**, Tokyo Metropolitan Univ. (Japan); **Dan T. Gillespie**, Naval Air Warfare Ctr. (USA); **Peter Hänggi**, Univ. Augsburg (Germany); **Katja Lindenberg**, Univ. of California/San Diego (USA); **Fabio Marchesoni**, Univ. di Camerino (Italy); **Peter V. E. McClintock**, Lancaster Univ. (United Kingdom); **Juan M. R. Parrondo**, Univ. Complutense de Madrid (Spain); **Cosma R. Shalizi**, Univ. of Michigan (USA); **Fernando Sols**, Univ. Autonoma de Madrid (Spain); **H. Eugene Stanley**, Boston Univ. (USA); **Kurt Wiesenfeld**, Georgia Institute of Technology (USA); **Horacio S. Wio**, Univ. de les Illes Balears (Spain)

This topical conference considers hot topics, experimental and theoretical aspects of fluctuation and noise in complex nonlinear systems.

Accepted papers will be published in the Proceedings of SPIE and extended selected papers may be published in a special issue of a scientific journal.

Papers are solicited on the following and related areas:

- statistical physics and nonlinear dynamics of stochastic systems and application in biological, economic and social dynamics
- stochastic self-organization and evolution
- stochastic resonance and synchronization
- pattern formation in systems with noise
- stochastic optimization and control
- escape theory in non-equilibrium complex systems
- molecular agents, intelligent particles and collective behavior
- stochastic and quantum cellular automata
- stochastic and quantum game theory
- stochastic dynamics of small networks
- non-linear noisy information channels
- theory and applications of Brownian motors and ratchets.

Access SPIE Web at www.spie.org/info/fn for an updated list of invited speakers.

Noise and Information in Nanoelectronics, Sensors, and Standards (fno6)

Conference Chair: **Janusz M. Smulko**, Gdansk Univ. of Technology (Poland)

Cochairs: **Yaroslav Blanter**, Technische Univ. Delft (Netherlands); **Mark I. Dykman**, Michigan State Univ. (USA); **Laszlo B. Kish**, Texas A&M Univ. (USA)

Program Committee: **Markus Ahlskog**, Helsinki Univ. of Technology (Finland); **Gennady Berman**, Los Alamos National Lab. (USA); **Raphael Blumenfeld**, Cavendish Lab. (United Kingdom); **Howard E. Brandt**, Army Research Lab. (USA); **Robert Cohn**, Air Force Office of Scientific Research (USA); **Robert A. Cottis**, Univ. of Manchester Institute of Science and Technology (United Kingdom); **Kazimierz Darowicki**, Gdansk Univ. of Technology (Poland); **Paul J. Edwards**, Univ. of Canberra (Australia); **Yuri M. Galperin**, Univ. of Oslo (Norway); **Brage Golding**, Michigan State Univ. (USA); **Giuseppe Iannaccone**, Univ. degli Studi di Pisa (Italy); **Grzegorz Jung**, Ecole Polytechnique (France); **Thomas W. Kenny**, Stanford Univ. (USA); **Can E. Korman**, George Washington Univ. (USA); **Andreas Mandelis**, Univ. of Toronto (Canada); **Jesper Mygind**, Technical Univ. of Denmark (Denmark); **Vitali P. Parkhutik**, Univ. Politécnica de Valencia (Spain); **Don M. Parkin**, Los Alamos National Lab. (USA); **Paulius Sakalas**, Technische Univ. Dresden (Germany); **Ludwik Spiralski**, Gdansk Univ. of Technology (Poland); **Peter Svedlindh**, Uppsala Univ. (Sweden); **Béla Szentpáli**, Research Institute for Technical Physics (Hungary); **Robert Vajtai**, Rensselaer Polytechnic Institute (USA); **John R. Vig**, U.S. Army Communications & Electronics Command (USA); **Stuart A. Wolf**, DARPA (USA); **Dwight L. Woolard**, Army Research Office (USA)

This topical conference considers scientific and technological aspects of fluctuations and noise in novel and traditional systems, including nanoelectronics, quantum computers, and electronic, optical, and chemical sensors and standards.

Accepted papers will be published in the Proceedings of SPIE. Selected papers may be published also in a special issue of one of the leading topical journals.

Presentations are solicited in the following areas:

- noise and information in nanoelectronic devices
- energy cost of information processing in classical and quantum systems
- noise, decoherence, and fidelity in quantum computing
- noise and quantum measurements
- thermal and shot noises in classical and quantum systems
- noise in point contacts and quantum dots
- noise in sensors
- fluctuation-enhanced sensing
- higher order statistics in noise analysis
- electrochemical noise
- noise and sensing at extreme temperatures
- fluctuations in standards and oscillators.

Access SPIE Web at www.spie.org/info/fn for an updated list of invited speakers.

Call for Papers

Noise in Communication (fno7)

Conference Chair: **Langford B. White**, The Univ. of Adelaide (Australia)

Cochairs: **Costas N. Georghiades**, Texas A&M Univ. (USA); **Michael H. Hoffmann**, Univ. Ulm (Germany); **Lluís Pradell**, Univ. Politecnica de Catalunya (Spain)

Program Committee: **Nigel Bean,** The Univ. of Adelaide (Australia); **Helmut Boelcskei**, Swiss Federal Institute of Technology (Switzerland); **Bruce R. Davis**, The Univ. of Adelaide (Australia); **Arnaud Doucet**, Univ. of Cambridge (United Kingdom); **Robert Elliott**, Univ. of Calgary (Canada); **David H. Hughes**, Air Force Research Lab. (USA); **Gopinath Kallianpur**, Univ. of North Carolina (USA); **Vikram Krishnamurthy**, Univ. of British Columbia (Canada); **W. Paul Malcolm**, Defence Science and Technology Organisation (Australia); **Björn E. Ottersten**, Royal Institute of Technology (Sweden); **Sylvie L. Perreau**, Univ. of South Australia (Australia); **James E. Schroeder**, DSpace Ltd. (Australia); **Erchin Serpedin**, Texas A&M Univ. (USA); **Peter J. Sherman**, Iowa State Univ. (USA); **Peter G. Taylor**, The Univ. of Melbourne (Australia); **Lang Tong**, Cornell Univ. (USA)

This conference examines a wide range of noise and fluctuation phenomena observed in communications systems, ranging from physical layer issues including, modulation and coding, detection and estimation, optical and wireless transmission right up to fluctuation effects in wide area networks such as the internet. Noise and interference suppression issues including optimal and multiuser detection, nonlinear filtering, Monte Carlo methods and related modelling issues will also be addressed.

Accepted papers will be published in the Proceedings of SPIE. Selected papers may be published also in a special issue of one of the leading topical journals.

Presentations are solicited in the following areas:

- noise modelling and mitigation in multiaccess systems
- fading channel modelling for wireless and mobile communications
- underwater acoustic communication systems
- teletraffic modelling of heterogeneous packet switched networks
- wide area fluctuations in the internet
- modelling of networks of queues
- congestion control in packet switched networks
- quality of service provisioning
- routing instabilities and periodicities in packet switched networks
- fundamental modelling methods including hidden Markov models
- filtering and smoothing
- Markov decision processes in communications systems
- detection and estimation for nonstandard noise problems
- stabilisation and control of fluctuations in communications networks
- applications of sequential MC/particle filters in communications
- noise sources in optical communications systems
- modelling and measuring phase noise in oscillators
- modelling and measuring jitter of clock-signals
- non-linear noise-driven effects in communication systems
- noise in mixers and frequency converters
- modelling and measuring noise in room-temperature and cryogenic amplifiers
- noise in digital modulations
- noise in wireless communication systems
- methods for measuring noise in microwave communications systems.

Proposals for invited papers/sessions are also sought. Please contact the conference Chair Prof Lang White (Lang.White@adelaide.edu.au)

Access SPIE Web at www.spie.org/info/fn for an updated list of invited speakers!

Important Dates!

Abstract Due Date: **13 October 2003**

Manuscript Due Date: **1 March 2004**

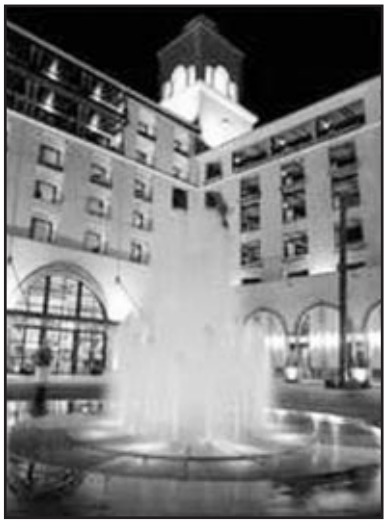
Proceedings will be published and available at the meeting. The abstract and manuscript due dates must be strictly observed.

Maspalomas, Gran Canaria

The symposium will take place in Maspalomas, famous world-wide probably not for its NASA and ESA Space Stations, but for its beaches and range of leisure activities. The island's charms reside in its constant contrasts, apparent even in the modern and cosmopolitan capital city of Las Palmas de Gran Canaria, with its busy harbor—an open window into the world. The population of the island (1.8 million) enjoys the most advanced services in consumer foods, health, leisure, and culture. The region has residential and business areas appropriate for executives, along with modern highway and communication infrastructures. All these facilities allow the island to enjoy the quality of life that characterize modern societies, and to share this lifestyle with over 9 million visitors every year. From the observatories of the Astrophysics Institute, the Universe is within the reach of visitors and residents. Amazing images being received from Earth Observation Satellites can also be admired at Maspalomas Space Station. The famous Botany Garden at Tafira, close to one of the University campuses, or the Bandama volcano crater or Roque Nuble, one of the highest peaks, are worth a visit. The diverse research institutes on the island are proud to receive scientists from all over the world to exchange knowledge and contribute to the advancement of science and technology.

Conference Hotel

The Gran Hotel Costa Meloneras is situated on the southern coast of Gran Canaria Island in Maspalomas. It is close to the famous Maspalomas lighthouse. The popular Las Meloneras beach and the Natural Dunes Park of Maspalomas are just a few minutes walk away. Close to the hotel you will find the shopping center Varadero as well as the new Congress Palace of Maspalomas. The golf course is about 2 kilometers away from the hotel. The hotel is built in the typical colonial Canarian architecture style, with different levels, seven inner patios, and some miradors to enjoy the marvelous views of the area. It offers large and comfortable rooms with modern decoration, air conditioning, telephone, minibar, safe deposit box for rent, satellite TV, fully furnished bathroom with hairdryer and telephone, and a terrace with mountain view or garden/pool view. The hotel offers 2 heated swimming pools with different sizes and temperatures, and a heated pool with a central island where the childrens pool is allocated. The Laguna swimming pool has a 5-meter waterfall, solarium terrace with Jacuzzis, a large garden area with 700 palm trees, 4 tennis courts, 2 paddle courts, shuffleboard, and French bowls. The hotel also has an entertainment program for adults and children with activities during the daytime and in the evening too, with sports, competitions, contests and many other activities with the participation of guests. For more information about this beautiful hotel, please download the hotel information form found on SPIE Web at www.spie.org/info/fn. Hotel rates for conference attendees will be included in the technical program available on SPIE Web in February and mailed to conference participants in early March 2004.



Submission of Abstracts for

Second SPIE International Symposium on
Fluctuations and Noise

Abstract Due Date: **13 October 2003** *Manuscript Due Date:* **1 March 2004**

Proceedings will be published and available at the meeting.
ALL DUE DATES MUST BE STRICTLY OBSERVED

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2. **Request an Advance Technical Program.** Only those who submit an abstract or request a program will receive one.

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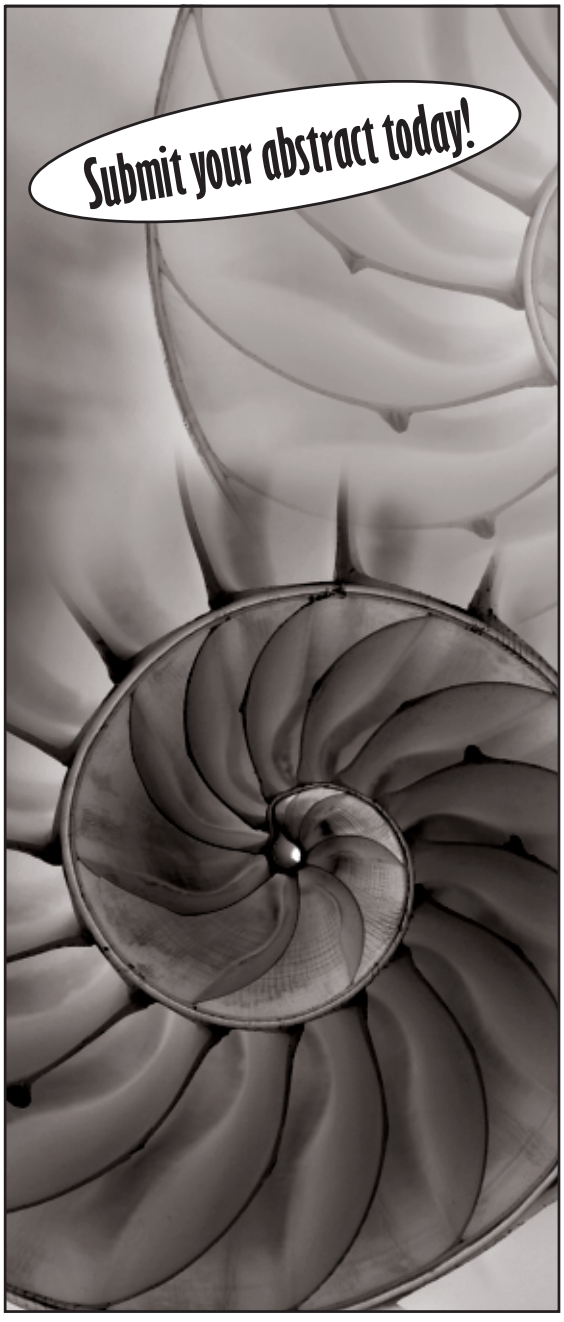

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