

**The 7th International Workshop on
Complex Systems and Networks
(IWCSN 2010)**

Program

September 25-27, 2010, Beijing, P. R. China

Welcome

The IWCSN10 is the 7th International Workshop in the successful series of events organized consecutively in Bologna (2004), Hong Kong (2005), Vancouver (2006), Guilin (2007), Canberra (2008), and Bristol (2009). This year, the IWCSN10 is officially organized the Academy of Mathematics and Systems Science, Chinese Academy of Sciences.

The IWCSN10 focuses on complex systems and complex networks, multi-agent systems, systems biology, sensor networks, communication networks, networked control systems, and their applications. The workshop is sponsored, financially and/or technically, by the IEEE Circuits and Systems Society and its Nonlinear Circuits and Systems Technical Committee, the Centre for Chaos and Complex Networks at the City University of Hong Kong, the Research Centre for Complex Networks of Wuhan University, the China Center of Advanced Science and Technology, the Beijing Jiaotong University, and the Academy of Mathematics and Systems Science, Chinese Academy of Sciences. For more information, please kindly visit the following web: <http://cscn.amss.ac.cn/iwcsn2010/>

Organizing Committee

- Jinhu Lu (AMSS, CAS, China)
- Guanrong Chen (CityU, HK)
- Xiaofan Wang (SJTU, China)

Contact

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Program

Friday 24 September (Workshop Registration)

9:00am---8:00pm: Registration (Jadepalace Hotel)

Saturday 25 September (Workshop - Day 1)

Workshop Venue: Lecture Room, First Floor, Siyuan Building, AMSS, CAS

Morning Session: Chair (Guanrong Chen)	
08:50--09:00	Opening
09:00--10:00	Lei Guo (CAS, China), TBA
10:00--10:15	Coffee Break
10:15--11:15	David Hill (ANU, Australia), Networked Control of Power Networks
11:15--12:15	Michael C. K. Tse (PolyU, HK) Get Panic or Synchronized in the Network of Stocks
12:15--13:45	Lunch
Afternoon Session: Chair (Jinhu Lu)	
13:45--14:45	Xinghuo Yu (RMIT, Australia), Complex Networks Issues in Smart Grids
14:45--15:45	Mario di Bernardo (U Bristol, UK and U Naples, Italy), Control and Synchronization of Evolving Dynamical Networks
15:45--16:30	David M. Walker (U Mel, Australia) A Triumvirate of Complex Network Methods to Study Granular Materials
16:30--17:30	Bus to Quanmen
17:30--19:30	QUANJUDE (Dinner for Workshop Invited Speakers)

Sunday 26 September (Workshop - Day 2)

Workshop Venue: Lecture Room, First Floor, Siyuan Building, AMSS, CAS

Morning Session: Chair (Zhisheng Duan)	
09:00--10:00	Guanrong Chen (CityU, HK), Laplacian Spectra of Complex Networks and Their Effects on Synchronizability
10:00--10:15	Coffee Break
10:15--11:15	Ljiljana Trajkovic (SFU, Canada), Spectral Analysis and Dynamical Behavior of Complex Networks
11:15--12:15	Maciej Ogorzalek (Jagiellonian U, Poland) 3D Integrated Circuits - A Real Complex Network Challenge
12:15--14:00	Lunch
Afternoon Session: Chair (Michael Tse)	
14:00--15:00	Gianluca Setti (U Ferrara, Italy), Hardware Efficient Random Numbers Generation with Chaos
15:00--15:15	Coffee Break
15:15--16:15	Chai Wah Wu (IBM, NY, USA), Some Graph-Theoretical Criteria for Control in Networks of Dynamical Systems
16:15--17:15	Igor Belykh (GSU, USA), Synchronization and Graph Topology
17:15--17:30	Closing
18:00--20:00	Suzhehui (Dinner for Workshop Invited Speakers)

IWCSN 2010 Abstracts

Title: TBA

Speaker: Professor Lei Guo (MCAS, FMRSAES, IEEE Fellow, IFAC Fellow)
Academy of Mathematics and Systems Science, Chinese Academy of Sciences

Bio:

Lei Guo is currently the President of the Academy of Mathematics and Systems Science, Chinese Academy of Sciences (CAS). He obtained his Ph.D degree from CAS in 1987, and was elected Fellow of the IEEE in 1998, Member of the CAS in 2001, Fellow of the Academy of Sciences for the Developing World (TWAS) in 2002, Foreign Member of the Royal Swedish Academy of Engineering Sciences in 2007, and Fellow of the International Federation of Automatic Control (IFAC) in 2007.

He is currently a Council Member of IFAC, a Vice-President of the Chinese Society for Industry and Applied Mathematics, and a Vice-President of the Chinese Association of Automation. He is the Editor-in-Chief of the Journal of Systems Science and Complexity, and is on the editorial boards of a number of journals in the areas of systems, control and mathematics.

He has worked on problems in adaptive control, system identification, stochastic systems, non-stationary time series analysis and adaptive signal processing. His current research interests include feedback and uncertainty, multi-agent systems, complex adaptive systems and quantum control systems.

For more information see <http://lsc.amss.ac.cn/~lguo/>

Title: Networked Control of Power Networks

Speaker: Professor David John Hill (FAAS, FMRSAES, IEEE Fellow)
The Australian National University

Abstract:

The modernization of electricity grids worldwide aims to achieve substantial new capabilities including integration of renewable and alternative energy sources, the infrastructure for plug-in hybrid vehicles and accompanying improvements in efficiency and effectiveness despite the vastly increased uncertainty. It is clear that all this can only be achieved by greater reliance on sensing, communications, computing and control, these days captured in the term ‘smart grids’. This talk will outline the more fundamental issues in developing automation and control architectures which will deliver the needed self-awareness, self-organisation and self-healing processes. There are many points of difference with other information networks such as the Internet, a major one being the need for quality of service guarantees. A range of unsolved problems in networked sensing, communications and control emerge which demand collaboration between computer, control and network sciences. These issues will be related to a major ‘smart grid smart city’ project involving government and utility funding in Australia.

Bio:

David J Hill received the BE (Electrical) and BSc (Mathematics) degrees from the University of Queensland, Australia, in 1972 and 1974, respectively. He received the PhD degree in Electrical Engineering from the University of Newcastle, Australia, in 1976. He is currently a Professor in the School of Engineering at The Australian National University and the NICTA Canberra Research Laboratory. He is also a Chief Investigator of the Australian Research Council Centre of Excellence for Mathematics and Statistics of Complex Systems. During 2005-2010, he was an Australian Research Council Federation Fellow at ANU. He has held academic and substantial visiting positions at the universities of Melbourne, California (Berkeley), Newcastle (Australia), Lund (Sweden), Sydney and Hong Kong (City University). His research interests are in network systems, stability analysis, nonlinear and distributed control and applications, mainly to infrastructure type networks. He is a Fellow of the Institution of Engineers, Australia, the Institute of Electrical and Electronics Engineers, USA, the Society for Industrial and Applied Mathematics, USA, and the Australian Academy of Science; he is also a Foreign Member of the Royal Swedish Academy of Engineering Sciences.

Title: Laplacian Spectra of Complex Networks and Their Effects on Synchronizability

Speaker: Professor Guanrong Chen (IEEE Fellow)
City University of Hong Kong

Abstract:

The Laplacian spectrum of a network contains a great deal of information about the network topology, with significant effects on the dynamics of the network synchronization process. In this talk we explore and analyze the Laplacian spectra of several typical complex network models and, at a mesoscale, to study their effects on the network synchronizability.

First, we review some basic bounds and estimations of Laplacian eigenvalues. Then, we argue that the statistical properties of a network cannot be used to infer the network synchronizability. Moreover, we show that the Laplacian eigenvalues of several representative complex networks have very different properties, although they also share some common features meanwhile. Further, we reveal a correlation between the Laplacian spectrum and the node-degree sequence of a network, demonstrating that scale-free networks have the highest correlation values, followed by random networks and then by small-world networks. Finally, we post a couple of seemingly simple and practically useful open problems for future studies.

Bio:

Professor Chen received the MS degree in Computer Science from Zhongshan University, China in 1981 and the PhD degree in Applied Mathematics from Texas A&M University, USA in 1987, with Post-Doctorate research experience in nonlinear systems dynamics and controls. He is an IEEE Fellow (since 1996) and currently a Chair Professor and the Director of Centre for Chaos and Complex Networks at the City University of Hong Kong. He serves as the Editor-in-Chief for the IEEE Circuits and Systems Magazine and for the International Journal of Bifurcation and Chaos, is an SCI highly-cited researcher in engineering with $h_{index} = 59$, and received 4 best journal paper awards in the past as well as the 2008 National Natural Science Award of China (second prize). He is an Honorary Professor at various ranks of more than 30 universities worldwide.

Title: Complex Networks Issues in Smart Grids

Speaker: Professor Xinghuo Yu (IEEE Fellow)
RMIT University, Australia

Abstract:

Smart Grids are electric networks that can intelligently integrate the actions of all users (e.g. generators and consumers) in order to efficiently deliver sustainable, economic and secure electricity supplies. It employs innovative monitoring, control, communication, and self-healing technologies for better connection and operations of generators and distributors, flexible choices for consumers, and reliability and security of electricity supply. Smart Grids are Complex Networks by nature which pose new theoretical challenging and practically significant problems that have to be addressed in order to meet increasing demands for deeper coordinated control, improved efficiency, reliability and security, and embedded generation. In this talk, we will first outline some recent developments and then examine the Complex Networks issues in Smart Grids. We will also report some of our recent research results on assessing reliability and security of smart grids.

Bio:

Xinghuo Yu received BSc and MSc degrees from University of Science and Technology of China, Hefei China, in 1982 and 1984, and PhD degree from South-East University, Nanjing China in 1988, respectively. He is now with RMIT University (Royal Melbourne Institute of Technology), Melbourne Australia, where he is the Director of RMIT's Platform Technologies Research Institute. Prof Yu's research interests include variable structure and nonlinear control, complex and intelligent systems and applications. He has published over 350 refereed papers in technical journals, books and conference proceedings.

Prof Yu has served/is serving as an Associate Editor of IEEE Transactions on Circuits and Systems Part I (2001-2004, 2010-Present), IEEE Transactions on Industrial Informatics (2005-2008), IEEE Transactions on Industrial Electronics (2007-Present) and several other scholarly journals. He received the 1995 Central Queensland University (Australia) Vice Chancellor's Award for Research, a Chang Jiang Scholar Award from the Ministry of Education of China in 2009, and was made Emeritus Professor of Central Queensland University in 2002 for his long term contributions.

Prof Yu is an IEEE Fellow, Vice-President (Planning and Development) of IEEE Industrial Electronics Society and an IEEE Distinguished Lecturer. He is a Fellow of the Institution of Engineers Australia (IEAust), and a Fellow of the Australian Computer Society (ACS). He is also chairing Technical Committee on Smart Grids of IEEE Industrial Electronics Society.

Title: Get Panic or Synchronized in the Network of Stocks

Speaker: Professor Michael C. K. Tse (IEEE Fellow)
Hong Kong Polytechnic University

Bio:

C.K. Michael Tse graduated from Melbourne University, Australia, with BEng (First Class Hons) and PhD in 1988 and 1991, respectively. He is currently Chair Professor and Head of Electronic and Information Engineering at Hong Kong Polytechnic University. His research interest includes complex networks, nonlinear circuits, power electronics and communications. He won several Best Paper Awards from IEEE and other international journals. He serves as Editor-in-Chief, Deputy Editor-in-Chief, Associate Editor and Guest Editor for a number of IEEE journals and international journals. He was appointed as IEEE Distinguished Lecturer in 2005, received the Distinguished International Research Fellowship by the University of Calgary, Canada, in 2007, and appointed as Chang Jiang Scholars Chair Professor at Huazhong University of Science and Technology in 2009. He also won the Gold Medal with Jury's Commendation at the International Exhibition of Inventions of Geneva, Switzerland, in 2009. Some of his patented inventions are being licensed for commercialization. He is a Fellow of IEEE and of the Institution of Engineers Australia.

Details of his work can be found in <http://cktse.eie.polyu.edu.hk>.

Title: 3D Integrated circuits - a real complex network challenge

Speaker: Professor Maciej Ogorzalek (IEEE Fellow)
Jagiellonian University Krakow, Poland

Abstract:

Within the last few years the microelectronic circuitry is going through a new challenging period of technological changes-further miniaturization and improvement of circuit performance is obtained by employment of nano-devices and nano-circuits and also by stacking of circuits in three-dimensional structures. Current 3D techniques enable unprecedented performance in terms of interconnectivity - thousands of interconnects are possible between subsequent layers of sub-circuits both established via wires or wireless. This very high density of interconnections creates new challenges and new areas of investigations. Currently developed 3D memory stacks show fantastic speed of signal transmission, very small latency for extremely high memory capacities - this is due to extremely high number of very short interconnects. Introduction of layers containing many different types of circuitry such as processors, RF circuits, memory modules, power management circuitry and others highly complicates the interconnectivity problem and requires new advanced tools to be developed. This presentation will review current technologies and also new approaches for solving the networking problems on-chip. 3D interconnects form a hierarchy which can be successfully treated with tools known for scientists working in the area of complex networks. Various types of complex networks can be found in the 3D chips - it is believed that the inter-layer signal transmission could be optimized by using the mathematical concepts developed for complex networks.

Bio:

Maciej J. Ogorzalek is Professor of Electrical Engineering and Computer Science and Head of the Department of Information Technologies, Jagiellonian University Krakow, Poland – the oldest (1364) and most prestigious higher education institution in the country. He held several visiting positions in Denmark, Switzerland, Germany, Spain, Japan, Hong Kong. He received a Research Award from the Ministry of Education of Spain in 2000 and worked for one year at the National Microelectronic Center, Sevilla, Spain. In 2001 he received a Senior Award from the Japan Society for Promotion of Science as visiting professor at Kyoto University and in 2005 Hertie Foundation Fellowship at The Goethe University Frankfurt-am-Main. 2006-2009 he held the Chair of Biosignals and Systems, Hong Kong Polytechnic University under the Distinguished Scholars Scheme. Author or co-author of over 250 technical papers published in journals and conference proceedings, author of the book *Chaos and Complexity in Nonlinear Electronic Circuits* (World Scientific, 1997). He served as Editor-in-Chief of the *Circuits and Systems Magazine* 2004-2007, Associate Editor for the *IEEE Transactions on Circuits and Systems Part I*, 1993-1995 and 1999-2001, he was elected Member of the Editorial Board Proceedings of the IEEE 2004-2009.

He serves also as an Associate Editor – International Journal of Bifurcation and Chaos (since 2004), Journal of the Franklin Institute (1997-), Member the Editorial Board for the Quarterly of Electrical Engineering (1993-2000), Member of the Editorial Board of Automatics (both in Polish), and Member of the Editorial board of the International Journal of Circuit Theory and Applications (2000-). Dr. Ogorzalek is IEEE Fellow (1997). He served the IEEE Circuits and Systems Society in various capacities including VP for Region 8, Administrative Vice-president and finally 2008 Society President. He was CAS Society Distinguished Lecturer (2004-2005) and received the 2002 Guillemin-Cauer Award and IEEE-CAS Golden Jubilee Award.

Title: Spectral Analysis and Dynamical Behavior of Complex Networks

Speaker: Professor Ljiljana Trajkovic (IEEE Fellow)
Simon Fraser University, Canada

Bio:

Ljiljana Trajkovic received the Dipl. Ing. degree from University of Pristina, Yugoslavia, in 1974, the M.Sc. degrees in electrical engineering and computer engineering from Syracuse University, Syracuse, NY, in 1979 and 1981, respectively, and the Ph.D. degree in electrical engineering from University of California at Los Angeles, in 1986.

She is currently a Professor in the School of Engineering Science at Simon Fraser University, Burnaby, British Columbia, Canada. From 1995 to 1997, she was a National Science Foundation (NSF) Visiting Professor in the Electrical Engineering and Computer Sciences Department, University of California, Berkeley. She was a Research Scientist at Bell Communications Research, Morristown, NJ, from 1990 to 1997, and a Member of the Technical Staff at AT&T Bell Laboratories, Murray Hill, NJ, from 1988 to 1990. Her research interests include high-performance communication networks, control of communication systems, computer-aided circuit analysis and design, and theory of nonlinear circuits and dynamical systems.

Dr. Trajkovic served as 2007 President of the IEEE Circuits and Systems Society. She was a member of the Board of Governors of the IEEE Circuits and Systems Society (2001 - 2003 and 2004 - 2005). She serves as Vice President Publications of the IEEE Systems, Man, and Cybernetics Society (2010 - 2011) and served as Vice President Long-Range Planning and Finance (2008 - 2009) and as a Member at Large of its Board of Governors (2004 - 2006). She is Chair of the IEEE Circuits and Systems Society joint Chapter of the Vancouver/Victoria Sections. She was Chair of the IEEE Technical Committee on Nonlinear Circuits and Systems (1998). She was Technical Program Co-Chair of ISCAS 2005 and served as Technical Program Chair and Vice General Co-Chair of ISCAS 2004. She served as an Associate Editor of the IEEE Transactions on Circuits and Systems (Part I) (2004 - 2005 and 1993 - 1995), the IEEE Transactions on Circuits and Systems (Part II) (1999 - 2001 and 2002 - 2003), and the IEEE Circuits and Systems Magazine (2001 - 2003). She is a Fellow of the IEEE.

Title: Hardware Efficient Random Numbers Generation with Chaos: Advantages and Limitations

Speaker: Professor Gianluca Setti (IEEE Fellow)
University of Ferrara, Italy

Bio:

Gianluca Setti received a Dr. Eng. degree (with honors) in Electronic Engineering and a Ph.D. degree in Electronic Engineering and Computer Science from the University of Bologna, Bologna in 1992 and in 1997, respectively. From May 1994 to July 1995 he was with the Laboratory of Nonlinear Systems (LANOS) of the Swiss Federal Institute of Technology in Lausanne (EPFL) as visiting researcher. Since 1997 he has been with the School of Engineering at the University of Ferrara, Italy, where he is currently a Professor of Circuit Theory and Analog Electronics. He held several visiting position at Visiting Professor/Scientist at EPFL (2002, 2005), UCSD (2004), IBM T. J. Watson Laboratories (2004, 2007) and at the University of Washington in Seattle (2008) and is also a permanent faculty member of ARCES, University of Bologna. His research interests include nonlinear circuits, recurrent neural networks, implementation and application of chaotic circuits and systems, statistical signal processing, electromagnetic compatibility, wireless communications and sensor networks. Dr. Setti received the 1998 Caianiello prize for the best Italian Ph.D. thesis on Neural Networks and he is co-recipient of the 2004 IEEE CAS Society Darlington Award, as well as of the best paper award at ECCTD2005 and the best student paper award at EMCZurich2005. He is also a Fellow of the IEEE. Dr. Setti served as an Associate Editor for the IEEE Transactions on Circuits and Systems - Part I (1999-2002 and 2002-2004) and for the IEEE Transactions on Circuits and Systems - Part II (2004-2007), the Deputy-Editor-in-Chief, for the IEEE Circuits and Systems Magazine (2004-2007) and as the Editor-in-Chief for the IEEE Transactions on Circuits and Systems - Part II (2006-2007) and of the IEEE Transactions on Circuits and Systems - Part I (2008-2009). He was the 2004 Chair of the Technical Committee on Nonlinear Circuits and Systems of the IEEE CAS Society, a Distinguished Lecturer (2004-2005), a member of the Board of Governors (2005-2008), and is serving as the 2010 President of the same society. Dr. Setti was also the Technical Program Co-Chair of NDES2000 (Catania) the Track Chair for Nonlinear Circuits and Systems of ISCAS2004 (Vancouver), the Special Sessions Co-Chair of ISCAS2005 (Kobe) and ISCAS2006 (Kos), the Technical Program Co-Chair of ISCAS2007 (New Orleans) and ISCAS2008 (Seattle), as well as the General Co-Chair of NOLTA2006 (Bologna). He is co-editor of the book Chaotic Electronics in Telecommunications (CRC Press, Boca Raton, 2000) and Circuits and Systems for Future Generation of Wireless Communications (Springer, 2009) as well as one of the guest editors of the May 2002 special issue of the IEEE Proceedings on "Applications of Non-linear Dynamics to Electronic and Information Engineering".

Title: Some Graph-Theoretical Criteria for Control in Networks of Dynamical systems

Speaker: Dr. Chai Wah Wu (IEEE Fellow)
IBM T. J. Watson Research Center, USA

Bio:

Chai Wah Wu received the B.A. in Cognitive Science from Lehigh University, the M.A. in Mathematics and the Ph.D. in Electrical Engineering from the University of California at Berkeley. He is currently manager of the distributed digital media infrastructure group at IBM T. J. Watson Research Center in Hawthorne, New York. His research interests include nonlinear dynamics, complex networks, distributed systems, image processing and graph theory. He has published over 100 papers and is the inventor of over 50 patents. He is a member of the AMS and a Fellow of the IEEE.

Title: Control and Synchronization of Evolving Dynamical Networks

Speaker: Professor Mario di Bernardo

University of Bristol, UK

University of Naples Federico II, Italy

Bio:

Mario di Bernardo is Professor of Nonlinear Systems and Control at the University of Bristol, UK and also holds the Associate Chair of Automatic Control at the University of Naples Federico II in Naples, Italy. In 1998 he obtained a Ph.D. in Engineering Mathematics from the University of Bristol, U.K. He was appointed to a Lectureship at the Department of Engineering Mathematics of the same University in 1997 and then promoted to a Readership and a Full Professorship. From 2001 till 2004, he also held a position at the University of Sannio, Italy.

His research interests are within the broad area of nonlinear systems, on both dynamics and control. He authored and co-authored more than 150 international scientific publications. Until December 2009, he served as Associate Editor of the IEEE Transactions on Circuits and Systems - I, and from January 2002 to 2006 he as Associate Editor of the IEEE Transactions on Circuits and Systems Express Letters. He is currently on the Editorial Board of the Newsletter of the IEEE Circuits and Systems Society. He is a member of the organizing committees of the IEEE Symposia on Circuits and Systems and has been chair or co-chair of many scientific events. In 2004 he was elected to the governing board of the Italian Society for Chaos and Complexity and in 2006 and again in 2009 to the Board of Governors of the IEEE Circuits and Systems Society. In January 2010 he was elected President of the Italian Society for Chaos and Complexity for the term 2010-2014. He received funding from major funding bodies and industries including the EPSRC, the European Union, the Italian Ministry of Research and University, Jaguar Engineering Centre, QinetiQ. Together with Bernard Brogliato (INRIA, France), he was the organizer and scientific coordinator of the EUR 2.8M EU Project SICONOS on the simulation and control of nonsmooth dynamical systems and team leader within the EU Project COBIOS on Engineering Complexity in Biological Systems.

On the 28th February 2007, he was honoured with the title of 'Cavaliere della Repubblica Italiana' (equivalent to a British OBE) for scientific merits by the President of the Italian Republic.

Title: Synchronization and Graph Topology

Speaker: Dr. Igor Belykh
Georgia State University, Atlanta, USA

Bio:

Dr Igor Belykh received his Ph.D. in Mathematics from the University of Nizhny Novgorod (former Gorky) in 2000 under the supervision of Leonid Shilnikov. He then joined the Laboratory of Nonlinear Systems, headed by Martin Hasler, at Swiss Federal Institute of Technology, Lausanne where he spent several years as a postdoctoral fellow and senior lecturer. In January 2006, he moved to Georgia State University, Atlanta, becoming an Assistant Professor of Applied Mathematics. He has a joint appointment as an Associate Member of the Neuroscience Institute at Georgia State University and of the Center for Nonlinear Science at Georgia Institute of Technology. He serves as an Associate Editor of five international journals, including the IEEE Transactions on Circuits and Systems II. His research interests include the applications of nonlinear dynamics in biology, neuroscience, and engineering. In particular, he develops a high-dimensional mathematical approach to dynamical networks and applies rigorous mathematical techniques to investigate the interplay between network structure and overall network dynamics, in view of its role in information processing, synchronization and pattern formation.

Title: A Triumvirate of Complex Network Methods to Study Granular Materials

Speaker: Dr. David M. Walker
University of Melbourne, Australia

Abstract:

Granular materials exhibit a vast and rich array of complex behaviours including self-organization, phase transition and emergent phenomena. The study of granular materials benefits greatly from a multi-disciplinary approach and recently from complex networks analysis. In this talk we present three ways in which the application of complex networks helps to characterize, model and promote the understanding of the rheological response of dense granular materials to loading. The methods are presented using simulation data and experimental shear and compression test systems with photo-elastic disks and real sand.

Bio:

Dr Walker obtained a BSc (Hons) degree from University of Aberdeen, a MMath from the University of Waterloo and a PhD from the University of Western Australia. He has worked as a researcher for Hewlett-Packard Labs, Biomathematics and Statistics Scotland, Hong Kong Polytechnic University and the University of Newcastle (Australia). His research interests include applying methods and techniques of nonlinear time series, control and dynamical systems, stochastic inference and complex networks to various applications including granular materials, disease transmission, animal behaviour and electronic device modelling.

General Information of IWCSN2010

Conference Address

- Hotel Address:

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Local Map between AMSS and Jade Palace Hotel
中国科学院数学与系统科学研究院和翠宫饭店的周边地图



