复杂系统与网络科学研究中心

Research Center for Complex Systems and Network Sciences

第一届复杂系统与网络科学研究中心论坛
The First Workshop of
Research Center for Complex Systems and Network Sciences

On Multi-agent Systems and Their Industrial Applications

余星火
皇家墨尔本理工大学

Date and Time: Saturday, 19 November 2011, 10:00am – 10:50am

Venue: 东南大学九龙湖校区图书馆 5 楼数学系第一报告厅

Abstract

A multi-agent system consists of multiple interacting intelligent agents. These agents are often expected to be autonomous individuals, such as robots or software programs, each under the influence of a local rule, representing its interaction with other agents. This talk will first give a brief introduction of multi-agent systems and their recent developments. It will then examine the research issues in multi-agent systems from viewpoints of complex networks and intelligent systems as well as their potential applications in areas such as smart grids.

About the Speaker

Xinghuo Yu received BSc and MSc degrees from the 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 Foundation Director of RMIT Platform Technologies Research Institute. Professor Yu's research interests include variable structure and nonlinear control, complex and intelligent systems and industrial applications. He has published over 400 refereed papers in technical journals, books and conference proceedings. Professor Yu is serving as an Associate Editor of IEEE Transactions on Circuits and Systems Part I, IEEE Transactions on Industrial Informatics, IEEE Transactions on Industrial Electronics and several other scholarly journals. He received an award under the Thousand Talents Program of the Chinese Government in 2010, a Chang Jiang Scholar (Chair Professor) Award from the Ministry of Education of China in 2009, the 1995 Central Queensland University Vice Chancellor's Award for Research, and was made Emeritus Professor of Central Queensland University in 2002 for his long term contributions. Professor Yu is a Fellow of the IEEE, Vice-President for Planning and Development (2010/2011) and Publications (2012), and an IEEE Distinguished Lecturer of IEEE Industrial Electronics Society. He is also a Fellow of the Institution of Engineers Australia and the Australian Computer Society. Professor Yu is currently Chair of Technical Committee on Smart Grids of IEEE Industrial Electronics Society.

Inquiry: Jinde Cao 曹进德 (jdcao@seu.edu.cn) or Wenwu Yu 虞文武 (wenwuyu@gmail.com)

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控制理论的发展与一部分存在的问题

段志生

北京大学

Date and Time: Saturday, 19 November 2011, 11:00am – 11:50am

Venue: 东南大学九龙湖校区图书馆 5 楼数学系第一报告厅

Abstract

本次报告首先简述控制理论的发展历程，以及现有的各类控制理论分支。然后就与个人研究相关的三个研究方向：分散控制、多输入协调控制、复杂网络课题讨论存在的相关问题。结合过去的发展，讨论一些与实际需求相结合的未来可能的一些发展方向。

About the Speaker

段志生，北京大学教授，博士生导师。1997 在内蒙古大学数学系获理学硕士学位，2000 年在北京大学力学与工程科学系获理学博士学位，2002 年北京大学博士后出站并留校工作。2003 年起任副教授，2008 年起任教授。当前主要研究方向为系统鲁棒控制、耦合系统协调控制、复杂网络理论与应用，航空航天飞行器控制等。先后多次访问澳大利亚 Monash 大学与香港城市大学进行合作研究。先后担任 *IEEE Transactions on Cicuits and Systems-I Regular papers*；*Dynamics of Continuous, Discrete & Impulsive systems, Series B*；*控制理论与应用*等期刊编委。现任控制理论专业委员会委员、副秘书长，动力学与控制专业委员会非线性振动与运动稳定性专业组副组长，复杂网络专业委员会委员等。先后发表 SCI 检索论文 80 多篇、主持多项国家自然科学基金面上项目、航天科技集团专项基金项目、多次参加自然基金重点项目等。

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Complex Dynamics In Biological Neuronal Oscillatory Systems

王青云
北京航空航天大学

Date and Time: Saturday, 19 November 2011, 14:00pm – 14:50pm

Venue: 东南大学九龙湖校区图书馆 5 楼数学系第一报告厅

Abstract

In this talk, we introduce some recent study in dynamics of biological neuronal systems including bifurcation, synchronization and patterns formation. In particular, some interesting results of biological experiments are firstly introduced. And then, by means of the theory of dynamical system, we explore bifurcation mechanism of dynamical behaviors of biological systems. Synchronization and patterns formation of the coupled neurons are investigated as some key parameters are changed and we got some novel synchronization transition. Furthermore, we theoretically explain the mechanism of synchronization transition. Finally, some open problems are discussed.

About the Speaker

王青云，北京航空航天大学一般力学博士毕业，北京大学工学院力学系博士后。现任北京航空航天大学一般力学教授，博士生导师。近年来在国内外核心期刊（如 PLoS ONE, Chaos , International Journal of Bifurcation and Chaos, Nonlinear Dynamics, Phys. Rev. E, Physica A, Phys. Lett. A, Europhysics Letters, Taiwanese Journal of Mathematics, New Journal of Physics, 力学进展等）已发表学术论文 60 余篇，被 SCI 检索论文 45 篇，ISTP 检索 6 篇，发表文章被他人引用 500 余次。由科学出版社出版学术著作一本，负责编写了由 Springer 出版社出版的书《Delay Differential Equations: Recent Advances and New Directions》其中一章的内容。研究兴趣包括：非线性动力系统的分岔与混沌理论及其应用，神经动力系统与复杂网络动力学，神经信息传递与编码。

Inquiry: Jinde Cao 曹进德 (jdcao@seu.edu.cn) or Wenwu Yu 虞文武 (wenwuyu@gmail.com)

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振动控制中的时滞效应

王在华
解放军理工大学

Date and Time: Saturday, 19 November 2011, 15:00pm – 15:50pm

Venue: 东南大学九龙湖校区图书馆 5 楼数学系第一报告厅

Abstract

About the Speaker

王在华，男，博士，解放军理工大学教授，南京航空航天大学教授，主要从事含记忆特征的动力系统（包括时滞动力系统，含分数阶导数的动力系统）的稳定性与非线性动力学，其研究成果曾获得国家自然科学奖二等奖（排名第二），是全国优秀博士学位论文获得者和国家杰出青年科学基金获得者，享受国务院政府特殊津贴。