学术报告会

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地点：**电院群楼2-410会议室**

An Introduction to Fuzzy Control: From Model-Free Design to Model-Based Analysis

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Abstract:

This talk will give an overview of fuzzy control, covering topics from the concept of fuzzy logic control, early-stage model-free fuzzy control methodologies to the state-of-the-art fuzzy-model-based control systems. A wide variety of fuzzy control systems and methodologies will be briefly reviewed. In particular, mathematical tools and basic stability analysis for fuzzy-model-based control systems will be presented. Recent contributions from the presenter to the membership-function-dependent stability analysis will be discussed. The talk is divided into two parts. In the first part, it gives an idea of rule-based control using fuzzy logic concept. In the second part, it focuses on the fuzzy-model-based control systems, in particularly, stability analysis using Lyapunov-based approach. In general, this talk will give a solid introduction to the model-free and model-based fuzzy control and an overview on its development in the past two decades from control concepts to theoretical analysis.

Biography:

H.K. Lam received the B.Eng. (Hons) and Ph.D. degrees from the Department of Electronic and Information Engineering, the Hong Kong Polytechnic University, Hong Kong, in 1995 and 2000, respectively. From 2000 to 2005, he worked in the same department as Post-doctoral and Research Fellows. In 2005, he joined as a Lecturer in King's College London, currently a Senior Lecturer and become a reader in September. He is an IEEE senior member. His current research interests include intelligent control and computational intelligence. In the area of intelligent control systems, he has researched fuzzy control systems, especially stability analysis, control synthesis and performance design. In the area of computational intelligence, he works on system analysis and topology design of neural networks, fuzzy logic systems and support vector machines, random-based searching algorithms and their applications dealing with forecasting, classification and recognition problems. He is an active and leading researcher evident by a considerably high number of citations of his work and h-index. He has authored/co-authored over 200 publications in the field. Details can be found in http://www.inf.kcl.ac.uk/staff/hklam