

2011 IEEE International Conference on Fuzzy Systems
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Call for papers - Special session: Recent Advances in Fuzzy-Model-Based
Control Systems (SS12)
Submission deadline: January 15, 2011
http://fuzziee2011.nutn.edu.tw/Special_Sessions.htm

Abstract: Fuzzy-model-based (FMB) control provides a systematic and efficient approach to controlling of nonlinear plants and analysis of nonlinear control systems. It has been employed to deal with a wide range of nonlinear control systems such as continuous-time, discrete-time, sampled-data, time-delay, switching, adaptive control systems and etc. In the past decades, it has drawn the attention of the researchers in the fuzzy control community. Promising theoretical and practical results have been achieved and reported.

In general, for the FMB control systems, system analysis and control synthesis are mainly based on the T-S fuzzy model in various forms. Due to the complexity of the nonlinear plants, it makes the analysis difficult and leads to conservative analysis results. There is still room for improvement of the existing analysis techniques and development of control methodologies in order to provide a better treatment for control of nonlinear systems.

In the proposed special session, the focus is mainly on the FMB control systems with emphasis on the system analysis, control methodologies and applications. It covers the state-of-the-art and the most recent research of significance in the field. The proposed special session serves an effective channel to communicate the collective experiences and knowledge of leading researchers. The important problems and difficulties on the FMB fuzzy control systems will be addressed, concepts will be explained and methodologies will be provided to handle the nonlinear systems using the FMB control approaches.

Keywords of the session: Fuzzy Control Systems, Fuzzy Model, Nonlinear Control

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Brief Biography:

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- Session Chair/Cochair for international FUZZ-IEEE and MSC conferences and local conferences.
- Courses taught: Circuits, Automatic Control, Principal of Microprocessor 80x86, Linear Algebra, Digital Control/Linear Control, Fuzzy Control, Adaptive Control, Robust Control.
- Present research interests include system and control theory, with emphasis on stability theory, robust control, optimal control and fuzzy control involving relaxation techniques on Linear Matrix Inequality and Sum of Squares.

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Brief Biography: Dr 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. During the period of 2000 and 2005, he worked with the Department of Electronic and Information Engineering at The Hong Kong Polytechnic University as Post-Doctoral Fellow and Research Fellow respectively. In 2005, he joined as a Lecturer in the King's College London. His current research interests include intelligent control systems and computational intelligence. He is an Associate Editor for *IEEE Transactions on Fuzzy Systems* and *International Journal of Fuzzy Systems (IJFS)*, and serves as a Program Committee Member for various international conferences.