

SICE 中部支部第 1 回制御理論研究会セミナー

日 時 : 2010 年 4 月 16 日 (金) 11 : 00~12 : 00

会 場 :

名古屋大学工学部 2 号館航空会議室

(<http://www.nagoya-u.ac.jp/global-info/access-map/higashiyama/> の 31 番の建物)

講 師 :

Bjorn Ruffer 博士 (メルボルン大)

題 目 :

Stability of large-scale interconnected systems, Small-gain conditions, the comparison principle

概 要 :

We consider the stability of network interconnections of arbitrarily many systems. Each system is assumed to be input-to-state stable (ISS) from the states of the other systems as disturbances to its own state. We will provide sufficiency criteria on the nonlinear gains of the interconnections for the composite network system to satisfy the respective same stability property as all its subsystems. These criteria take the form of a generalized small-gain theorems and comparison principles, and we shall consider three equivalent characterizations of ISS, namely trajectory estimates, the implication Lyapunov form and also dissipative Lyapunov estimates. We will briefly mention an application of these results to formation control.

講師紹介 :

Bjorn Ruffer received his Master of Science degree from the Department of Mathematics at the University of Warwick, UK, in 2004. In 2007 he completed his PhD thesis in the area of mathematical systems theory at the Center for Applied and Industrial Mathematics (ZeTeM) within the Department of Mathematics and Computer Science at the University of Bremen, Germany. In Bremen, he was also a member of the Collaborative Research Centre 637 "Autonomous Cooperating Logistic Processes – A paradigm shift and its limitations." From October 2007 to June 2009 he was a member of the Signal Processing Microelectronics (SPM) group and the School of Electrical Engineering and Computer Science at the University of Newcastle, Australia. Since July 2009 he is with the Department of Electrical and Electronic Engineering at the University of Melbourne, Australia. Currently he is visiting the Kyushu Institute of Technology at Iizuka, Japan, (with Professor Hiroshi Ito) as a JSPS postdoctoral fellow.