Special Session Proposal for ICAMechS2012

Advanced Control Systems Design
- Theory and Applications -

Organizers:

Ikuro Mizumoto* and Shiro Masuda**

* Kumamoto University

** Tokyo Metropolitan University

Session Theme and Objective:

During the recent decades, a great deal of attention has been attracted to advanced control system design for uncertain and complex practical systems due to many kinds of requirement for capability of the control on the improvement of the control performance, the costs performance and safety of the control system. With this in mind, several novel and advanced ideas in control methodology including adaptive, self-tuning, optimal and data-driven controls have been proposed and tried to apply to the practical systems.

The aim of this session is to present the new research ideas and results on advanced controls which deal with control problems for uncertain and/or complex controlled systems. The results on theory and applications of advanced control methods will be shown in order to demonstrate the applicability and efficiency of the proposed advanced control strategies. Moreover, future research interests in advanced controls including adaptive type control strategy will be promoted through discussions among the attendants of this session.

The proposed special session consists of the following papers.

Session papers:

Paper #1

Paper title:

Data-Oriented PID Control of an Injection Molding Process

Authors:

Shin Wakitani, Shintaro Hanata and Toru Yamamoto

Affiliation:

* Hiroshima University

Paper #2

Paper title:

Adaptive Design Method of Multirate PD Controller

Authors:

Takao Sato, Nozomu Araki and Yasuo Konishi

Affiliation:

*Universty of Hyogo

Paper #3

Paper title:

Stochastic Disturbance Attenuation Property for Discrete-time Two degree of freedom Optimal Servo Systems

Authors:

Shiro Masuda

Affiliation:

*Tokyo Metropolitan University

Paper #4

Paper title:

Adaptive Tracking Control Scheme for Wheeld Mobile Robots without Measurement of Longitudinal Velocity

Authors:

Shu Panfeng, Yuki Ishibashi, Hiroshi Shibata, Masahiro Oya

Affiliation:

Kyushu Institute of Technology

Paper #5

Paper title:

Robust High Gain Adaptive Control of Mechanical Systems with Uncertain Nonholonomic Constraints

Authors:

Ryuji Michino, Yoshihiko Sakamoto and Ikuro Mizumoto

Affiliation:

* Kumamoto Industrial Research Institute

** Kumamoto University

Paper #6

Paper title:

Self-repairing control using a nonlinear unstable filter

Authors:

Masanori Takahashi

Affiliation:

Tokai University