Invited Session Proposal

Title: “System Modeling, Control and Diagnosis for Energy-Efficiency in Buildings”

Summary of the session:

Research surveys in industrialized countries have shown that buildings account for about 40% of total energy use in these countries. Consequently, there has been a growing interest in high performance buildings where the underlying concept of performance incorporates both energy efficiency, thermal performance and healthy indoor environment. The achievement of this high performance objective is mainly dependent on the control strategies and the continuous commissioning of their heating, ventilation and air-conditioning (HVAC) systems under the constraints of managing the energy flows within the building to meet the needs of the occupants.

This invited session aims primarily at gathering information on current research activities on operating buildings in an energy efficient way through building and HVAC modeling, diagnostics and controls. A second objective of the session is to provide a platform for academic and industrial communities to exchange their latest results and to identify vital issues and challenges for future investigation on high performance buildings.

The papers to be published under this session are expected to provide recent advances on this area, in particular, novel ideas and algorithms with practical/experimental applications. Topics include, but are not limited to, the following research areas:

- Monozone/multizone modeling approaches, HVAC components modeling
- Building simulation tools and platforms
- Optimal supervisory control, model-based predictive control for building systems
- Energy-optimal control for space-conditioning systems
- Fault detection and diagnosis of HVAC and building systems
- Fault-tolerant control of HVAC systems
- Continuous commissioning

Submission Details:

Prospective authors are requested to submit their full papers online at [https://easychair.org/conferences/?conf=icarcv2016](https://easychair.org/conferences/?conf=icarcv2016) by 30 April, 2016. Please contact the organizers to obtain the Session Code required for paper submission under this session.

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