2013-2014 Monthly Seminar Series on Space Research
21 November, 20 February, 15 May
3rd Thursday 4:00-5:00 pm

Takagi-Sugeno Fuzzy Model-Based Control of Aerospace Vehicles

by

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Date: 20 February 2014 Thursday Time: 4:10-5:00 pm (Refreshments will be provided at 4:00 pm) Location: 1062 Bainer

ABSTRACT

The last decades have witnessed growing popularity of fuzzy control systems based on the Takagi-Sugeno model. Controllers of this type are capable of dealing with very complex problems and guarantee robustness, stability and good performance. Furthermore, they are simple and inexpensive to implement. The objective of this seminar is two-fold. First, we give an overview of conventional and Takagi-Sugeno (T-S) fuzzy control systems. In the second part, we present the recent performance results obtained by using T-S type fuzzy control systems in two aerospace applications: (1) spacecraft attitude and position control and vibration suppression in a flexible appendage during a retargeting maneuver, and (2) pitch control of a flexible aircraft with wing shape control structure.

ABOUT THE SPEAKER

Professor Ayoubi is an Assistant Professor in the Department of Mechanical Engineering at Santa Clara University. He graduated from the School of Aeronautics and Astronautics at Purdue University in 2007, after which he worked as a postdoctoral Research Associate with the Department of Aerospace and Ocean Engineering at Virginia Polytechnic Institute and State University (Virginia Tech). In 2008, he joined Santa Clara University. His general research interests are dynamics, controls, and optimization.

For more information about SpaceED (Space Engineering Research and Graduate Program) or the seminars please contact Professor Nesrin Sarigul-Klijn, Director of SpaceED at (530)-752-0682 or nsarigulklijn@ucdavis.edu

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SpaceED seminar will replace MAE297 seminar on 3rd Thursdays.
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Sign-in is required at the event.