

The IEEE Cleveland Chapter of Control System Society and  
HKN Epsilon Alpha Chapter Jointly Present

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***Aggressive Output Constraint  
Enforcement with Sliding Modes:  
Application to Turbofan Engine  
Controls***

**Friday, 3:00 pm, April 29, 2011  
(3:00-3:30: Social hour, 3:30-4:30: Seminar)**

Guest Speaker-----Dr. Hanz Richter  
Associate Professor of Mechanical Engineering  
Cleveland State University

In this talk, a limit management control arrangement using min-max logic is discussed. The min-max arrangement is commonly used in aeronautical gas turbine engines. The properties and shortcomings of the min-max logic are discussed and a new approach is proposed involving sliding mode controllers. The proposed control technique has guaranteed stability and does not introduce any conservativeness associated with constraint enforcement, representing a significant improvement over existing methods. The validity of the proposed technique is demonstrated with high-fidelity nonlinear engine simulations using NASA's CMAPSS package.

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***Refreshment and soft drink will be provided!***

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CPD Credit: 1 CPD hour is available. Please bring this flyer for credit.

This is to certify that \_\_\_\_\_ attended this seminar. Certified by \_\_\_\_\_ . Certificates of attendance and other evidence of CPD activity should be retained by the attendee for auditing purposes."