DEPARTMENT OF MECHANICAL ENGINEERING WILLIAM MAXWELL REED SEMINAR SERIES

Adaptive Tracking and Parameter Identification: Theory and Marine Robotic Applications
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Abstract: The adaptive tracking and parameter identification problem entails designing (a) a tracking controller that ensures that all solutions of a given control system track a desired reference trajectory and (b) a dynamic extension called an update law whose state asymptotically converges to the unknown parameter vector in the original given control system. This talk will explain the speaker's solutions to adaptive tracking and parameter identification problems in curve tracking, where the unknown parameters are control gains or curvatures. The convergence proofs are based on constructions of barrier Lyapunov functions. The work is motivated by the speaker's recent study of residual pollution from the Deepwater Horizon oil spill disaster, which used commercial and student-built marine robots to generate crude oil concentration maps in a lagoon at Grand Isle, Louisiana.

Bio: Michael Malisoff received his PhD in 2000 from Rutgers University in New Brunswick, NJ. In 2001, he joined the faculty of Louisiana State University in Baton Rouge, where he is now the Roy Paul Daniels Professor #3 in the College of Science. His main research has been on nonlinear control systems with time delays and uncertainty with engineering applications. One of his recent projects helped develop marine robotic methods to help understand the environmental impacts of hazards such as oil spills. His awards included the First Place Student Best Paper Award at the 1999 IEEE Conference on Decision and Control, and 9 Best Presentation awards in American Control Conference sessions. He is a current or past Associate Editor for Asian Journal of Control, Automatica, Systems and Control Letters, IEEE Transactions on Automatic Control, and SIAM Journal on Control and Optimization.

Date: February 17, 2017   **Time: 3:45pm**

Place: CB 110   **Contact: Dr. Alexandre Martin 257-4462**

Meet the speaker and have refreshments
Attendance open to all interested persons

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