



**The Center for Control, Dynamical Systems, and Computation  
University of California at Santa Barbara  
Fall 2009 Seminar Series  
Presents**

## **Adaptive Redesign of Nonlinear Observers with Application to an Oil Well Drilling System**

**Ole Morten Aamo  
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**Friday, September 25, 2009 3:00 - 4:00 PM HFH 1104**

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### **Abstract:**

A new adaptive observer (re)design is developed for nonlinear systems that have uncertain terms with regressors containing nonlinearities in unmeasured states. The design was originally motivated by the pressure estimation problem in an oil well drilling system, and this case will be presented along with a couple of other examples. The general design relies on the solution of a partial differential equations, however, in many cases the PDE reduces to an ordinary differential equation for which a solution can be found in closed form.

### **About the Speaker:**

Ole Morten Aamo received his MSc and PhD degrees in Engineering Cybernetics from the Norwegian University of Science and Technology (NTNU) in 1992 and 2002, respectively, and is currently a Professor with the same institution. His research interests include control of fluid flows with special emphasis on applications in the petroleum industry.

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