

Department of Applied Mathematics and Statistics  
The Johns Hopkins University

**SEMINAR**

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November 20, 2003  
304 Whitehead Hall  
Refreshments: 3:30 p.m.  
Seminar: 4:00 p.m.

**ADVANCES IN DYNAMICAL MODELING AND CONTROL  
OF UNDERWATER ROBOTIC VEHICLES  
FOR OCEANOGRAPHIC EXPLORATION**

**ABSTRACT**

This talk reports recent advances in control and navigation of underwater vehicles for deep ocean exploration. Problems arising in the dynamical modeling, state measurement, and control of underwater vehicles will be discussed. A family of stable model-based adaptive control laws for the problem of trajectory tracking will be reported. Experiments evaluating the performance of these approaches with the Johns Hopkins University Remotely Operated Vehicle (JHU ROV) will be reviewed. Finally, recent deployments in the Pacific Ocean and the Mediterranean Sea will be reported.