

**MECHANICAL ENGINEERING DEPARTMENT
ME/ISyE 8773-8774**

Provably Safe Algorithms for Multi-Sensor Navigation

by

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Wednesday, December 10, 2008
3:15 p.m. — Refreshments before the seminar
3:30 p.m. — Graduate Seminar
Room 1130 Mechanical Engineering

ABSTRACT — Navigation systems are used to determine the position, velocity and orientation of vehicles, objects or persons. The highly accurate and nearly ubiquitous navigation solution available from satellite-based systems such as GPS have enabled the development of novel engineering applications such as precision landing of aircraft, autonomous operation of ground vehicles, asset tracking and personnel navigation. However, it has become apparent that a single system such as GPS does not provide the safety and reliability demanded by some of these applications. Thus, the recent trend has been toward navigation systems which integrate information from multiple navigation systems or sensors (multi-sensor navigation systems). In this presentation, we will look at the issues associated with the design of multi-sensor navigation systems. In particular, we will examine some of the approaches that are being used to ensure that systems used in applications with safety-of-life implications have the requisite reliability.

BIO — **Dr. Demoz Gebre-Egziabher** is an associate professor of Aerospace Engineering and Mechanics at the University of Minnesota. His research deals with the design of algorithms and systems for navigation and guidance of aerospace vehicles. Dr. Gebre-Egziabher received his Ph.D. in Aeronautics and Astronautics from Stanford University.

Informal Faculty Luncheon: Wednesday, December 10, 2008, 12:30 pm. Meet in Room 1100 ME and walk to lunch with other faculty. Prof. Demoz Gebre-Egziabher will be able to attend.
Host: Sean Garrick