1052-34-89   **Anthony M Bloch*** (`abloch@umich.edu`), Dept. of Mathematics, University of Michigan, Ann Arbor, MI 48109. *Dynamics of gradient flows, Hamiltonian flows and thermostats.*

In this talk I will discuss the qualitative behavior of various flows which have asymptotically stable equilibria. In particular, I will compare the behavior of gradient flows, so-called double bracket flows on adjoint orbits, and certain nonholonomic flows. In the double bracket setting I will discuss the special case which yields the integrable Toda flows. In the nonholonomic setting I will discuss both constraints which are linear and nonlinear in the velocities. The latter case occurs in the dynamics of thermostats. (Received August 21, 2009)