KENNETH MEYER, University of Cinncinnati
Asymptotic Stability Estimates near an Equilibrium Point

We use the error bounds for adiabatic invariants found in the work of Chartier, Murua and Sanz-Serna to bound the solutions of a Hamiltonian system near an equilibrium over exponentially long times. Our estimates depend only on the linearized system and not on the higher order terms as in KAM theory, nor do we require any steepness or convexity conditions as in Nekhoroshev theory. We require that the equilibrium point where our estimate applies satisfy a type of formal stability called Lie stability.