

1046-34-713

Marc Chamberland* (chamber1@math.grinnell.edu), Department of Mathematics and Statistics, 1116 8th Avenue, Grinnell College, Grinnell, IA 50112. *Global Stability with Dulac Functions.*

The most well-known general approach to prove global stability of an equilibrium point for a system of differential equations is to use Lyapunov functions. However, finding an appropriate Lyapunov function usually requires lots of experience, hard work, and perhaps some luck. Less demanding to find are Dulac functions which are used in planar systems to eliminate periodic orbits. In this talk, we see that Dulac functions are sometimes enough to give the desired stability. Tied in this work are so-called Jacobian Conjectures. (Received September 10, 2008)