

Control and stability of periodic orbits of completely integrable systems

Razvan Micu Tudoran

West University of Timisoara
Bld. Vasile Parvan, No. 4, Timisoara
Romania
tudoran@math.uvt.ro

The aim of this talk is to present a constructive method in order to control the stability of a given periodic orbit of a general completely integrable system. The method consists of a specific type of perturbation, such that the resulting perturbed system becomes a codimension-one dissipative dynamical system which also admits that orbit as a periodic orbit, but whose stability can be a-priori prescribed. The main results are illustrated in the case of a three dimensional dissipative perturbation of the harmonic oscillator, and respectively Euler's equations from the free rigid body dynamics.