

Formal stability of elliptic equilibria in Hamiltonian systems with exponential time estimates

Daniela Cárcamo Díaz, Universidad del Bío-Bío

E-mail address: danielacarcamodiaz@gmail.com.

We will consider an autonomous Hamiltonian system with n degrees of freedom such that the origin of the phase space is an elliptic equilibrium. We establish a criterion to obtain formal stability. Our results generalise previous approaches, as exponential stability in the sense of Nekhoroshev or Lie stability and other classical results on formal stability of equilibria. In case of formally stable systems we bound the solutions near the equilibrium over exponentially long times. We provide some examples to illustrate our main results.

This is a joint work with C. Vidal.