Stability of fixed points for periodic Hamiltonian systems

Luis Franco[1], Ernesto Pérez-Chavela[2]

[1] *Department of Applied Mathematics and Systems, UAM, Campus Cuajimalpa, Mexico City, Mexico.*
E-mail: lfranco@correo.cua.uam.mx

[2] *Department of Matematics, UAM, Campus Iztapalapa, Mexico City, Mexico.*
E-mail: epc@xanum.uam.mx

We study the stability of equilibria for periodic Hamiltonian systems with one and a half degrees of freedom. We focus on systems coming from the second Newton's Law and we show that equilibria are unstable solutions when the force depends on time periodically and it is increasing at the equilibria. We give conditions to determine when the equilibria have hyperbolic structure. We show some examples exhibiting the powerful of the above result.