

**STABILITY OF EQUILIBRIUM SOLUTIONS OF AUTONOMOUS  
AND PERIODIC HAMILTONIAN SYSTEMS IN THE CASE OF  
MULTIPLES RESONANCES**

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ABSTRACT. In this talk we will discuss necessary conditions for Lie-stability of equilibrium solutions of autonomous and periodic Hamiltonian systems with  $n$  degrees of freedom which possesses multiples resonances of arbitrary order. Necessary conditions for instability in the sense of Lyapunov in some cases of multiples resonances are provided. These conditions depends on the order of the resonance and the coefficients of the Hamiltonian function.

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