

Lyapunov Type Inequalities for Fractional Impulsive Hamiltonian Systems

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Abstract : This paper deals with study about fractional order impulsive Hamiltonian systems and fractional impulsive Sturm-Liouville type problems derived from these systems. The main purpose of this paper devotes to obtain so called Lyapunov type inequalities for mentioned problems. Also, in view point on applicability of obtained inequalities, some qualitative properties such as stability, disconjugacy, nonexistence and oscillatory behaviour of fractional Hamiltonian systems and fractional Sturm-Liouville type problems under impulsive conditions will be derived. At the end, we want to point out that for studying fractional order Hamiltonian systems, we will apply recently introduced fractional Conformable operators.

Keywords : fractional derivatives and integrals, Hamiltonian system, Lyapunov-type inequalities, stability, disconjugacy

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