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Disconjugacy via Lyapunov type inequality for linear discrete Hamiltonian systems

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Abstract

In this talk, a disconjugacy criterion is obtained for the general linear discrete Hamiltonian systems by using a new Lyapunov type inequality. Our result is novel and generalizes the previous related results in the literature particularly the ones obtained for planar discrete Hamiltonian systems.

Key Words: Disconjugacy, Discrete Hamiltonian systems, Lyapunov type inequality.

References

[1] A. Zafer, Discrete linear Hamiltonian systems: Lyapunov type inequalities, stability and disconjugacy criteria, J. Math. Anal. Appl., 396 (2012), 606-617.

[2] Z. Kayar, A. Zafer, Matrix measure approach to Lyapunov-type inequalities for linear Hamiltonian systems with impulse effect, J. Math. Anal. Appl., 440 (2016), 250-265.