LYAPUNOV INEQUALITIES FOR TWO KINDS OF HIGHER–ORDER MULTI–POINT FRACTIONAL BOUNDARY VALUE PROBLEMS

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Abstract. We obtain Lyapunov inequality and Hartman-Wintner-type inequality for two higher-order multi-point fractional boundary value problems. The technique of order-reduction and the properties of Green’s function are important to our results. As applications, we discuss the eigenvalue problem and the real zeros for Mittag-Leffler function.


Keywords and phrases: Caputo fractional derivative; Multi-point; Green’s function; Lyapunov inequality; Eigenvalue problem; Mittag-Leffler function.

REFERENCES


