

عنوان مقاله:

Two Estimations of the united solution set to the Interval Unilateral Quadratic Matrix Equations

محل انتشار:

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خلاصه مقاله:

Introducing the interval unilateral quadratic matrix equation, $A.X^2+B.X+C=0$, we describe some analytical results on its AE-solution sets in which A, B and C are known real interval matrices, while X is the unknown matrix. Then, one sufficient condition for solvability (non emptiness of the united solution set) of the united solution set is given. Two direct methods for estimation of the united solution set of this interval unilateral quadratic matrix equation are proposed. Suggested techniques are based on sensitivity analysis as well as nonlinear programming. Finally, these methods are tested on a number of numerical examples and their results are compared to each other.

کلمات کلیدی:

Interval unilateral quadratic matrix equation, interval arithmetic, united solution set, nonlinear programming, sensitivity analysis

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