Matrix bounds for the solution for the discrete algebraic Riccati matrix equation

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Abstract

The discrete algebraic Riccati equations play a fundamental and important role in various engineering areas such as system theory, signal processing and optimal control theory. In this talk, we present some matrix bounds for the positive semidefinite solution matrix of the discrete algebraic Riccati matrix equation (DARE). Also, using these bounds obtained , we give eigenvalue, trace, and determinant bounds for the solution matrix of DARE. Then, we give numerical examples in order to show that our bounds are tighter than the other results in some cases.

Keywords

Discrete Riccati equation, Matrix inequalities.

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