

On properties of special saddle point matrices

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Abstract

Some saddle point matrices with two vector blocks are considered. These kind of matrices arise in different fields; for instance, in standard quadratic program on standard simplex if the left-up matrix is symmetric, in game theory if the left-up matrix (not necessarily symmetric) is interpreted as the payoff matrix of the game.

The considered class of saddle point matrices allows to formulate a simple form of necessary and sufficient conditions for existence of an interior solution of standard quadratic program or a completely mixed Nash equilibrium of a bi-matrix game. These special block matrices give also possibility to formulate simple formulas for computing the interior solution or for computing the completely mixed equilibrium.

Keywords

Saddle point matrix, Standard quadratic program, Bimatrix game.

References:

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