Matrix completion preserving matrix partial orderings

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Abstract

Matrix completion problems are concerned with determining whether partially specified matrices can be completed to fully specified matrices satisfying certain prescribed properties. In the presentation we are interested in these problems for matrix partial orderings.

Let matrix $\mathbf{A}$ be a block matrix not fully defined. For a given matrix $\mathbf{B}$ we analyse possible completing not specified blocks of the matrix $\mathbf{A}$ in such a way that the order

$$\boldsymbol{A} \leq \boldsymbol{B} \tag{1}$$

is fulfilled, where $\leq$ in (1) is one of the orderings: Löwner partial ordering, Star partial ordering, Minus partial ordering, or GL ordering (introduced in papers cited in References).

Keywords

Löwner partial ordering, Star partial ordering, Minus partial ordering, GL ordering.

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