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COMPLETING BLOCK HERMITIAN MATRICES WITH MAXIMAL AND MINIMAL RANKS AND INERTIAS[*]

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Abstract. For a Hermitian matrix with its main block diagonal given, this paper shows how to choose the off-diagonal blocks such that the resulting matrix has the maximal and minimal possible ranks and inertias, respectively. Some direct consequences and applications are also given.

Key words. Hermitian matrix, partial matrix, rank, inertia, matrix completion, matrix decomposition.

AMS subject classifications. 15A03, 15A23, 15A57.

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