DETERMINANTAL INEQUALITIES FOR
BLOCK TRIANGULAR MATRICES

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Abstract. Let $T = \begin{bmatrix} X & Y \\ 0 & Z \end{bmatrix}$ be an n-square matrix, where X, Z are r-square and $(n-r)$-square, respectively. Among other determinantal inequalities, it is proved that

$$\det(I_n + T^*T) \geqslant \det(I_r + X^*X) \cdot \det(I_{n-r} + Z^*Z)$$

with equality if and only if $Y = 0$.

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