

DETERMINANTAL INEQUALITIES OF POSITIVE DEFINITE MATRICES

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Abstract. Let A_i , $i = 1, \dots, m$, be positive definite matrices with diagonal blocks $A_i^{(j)}$, $1 \leq j \leq k$, where $A_1^{(j)}, \dots, A_m^{(j)}$ are of the same size for each j . We prove the inequality

$$\det\left(\sum_{i=1}^m A_i^{-1}\right) \geq \det\left(\sum_{i=1}^m (A_i^{(1)})^{-1}\right) \cdots \det\left(\sum_{i=1}^m (A_i^{(k)})^{-1}\right)$$

and more determinantal inequalities related to positive definite matrices.

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