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ON A CONJECTURE REGARDING CHARACTERISTIC POLYNOMIAL OF A MATRIX PAIR*

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Abstract. For n-by-n Hermitian matrices $A(>0)$ and B, define

$$\eta(A,B)=\sum_S \det A(S)\det B(S')\ ,$$

where the summation is over all subsets of $\{1,\ldots,n\}$, S' is the complement of S, and by convention $\det A(\emptyset)=1$. Bapat proved for $n=3$ that the zeros of $\eta(\lambda A,-B)$ and the zeros of $\eta(\lambda A(23),-B(23))$ interlace. This result is generalized to a broader class of matrices.

Key words. Symmetric matrices, Cycles, Characteristic polynomial, Interlacing.

AMS subject classifications. 15A15, 15A42.

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