

A MINIMAX PROBLEM ABOUT UNIT VECTORS IN THE PLANE

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Abstract. For $n \geq 2$, we obtain the extremal values of the minimax problem for exponential sums

$$\mu(n) := \min_{|x|=1} \max \left\{ \left| \sum_{k=0}^{n-1} x^k \right|, \left| \sum_{k=0}^{n-1} x^{kn} \right| \right\}.$$

Moreover, we show that the polynomial with coefficients 0 and 1 derived from $\mu(n)$ does not have zeros on the unit circle.

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