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Angular Distribution of Zeros of the Partial Sums of e^z via the Solution of Inverse Logarithmic Potential Problem

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Abstract. We continue the work of Szegő [18] on describing the angular distribution of the zeros of the normalized partial sum $s_n(nz)$ of e^z, where $s_n(z) := \sum_{k=0}^n z^k/k!$. We imbed this problem in some inverse problem of potential theory and prove a so-called Erdős-Turán-type theorem, which is of interest in itself.

Keywords. Szegő curve, logarithmic potential, harmonic measure.

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