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Distribution of alternation points in uniform polynomial approximation. (English)

Let $P_n$ be the polynomial of best uniform approximation to $f \in C[0,1]$, let $x_k$ be some $n + 2$ points of $[0,1]$ where $P_n(x_k) - f(x_k) = \epsilon(1)^k \|P_n - f\|$, with $\epsilon = +1$ or -1. The alternance points $x_k$ can be very irregularly distributed. There exists an entire function $f$ for which, for some arbitrary large $n$, all $x_k$ are contained in an arbitrary small neighborhood of 0, or of 1, or are equally distributed in $[0,1]$ for the measure $d\mu = (x(1-x))^{-1/2}dx$.

MSC:
- 41A10 Approximation by polynomials
- 41A50 Best approximation, Chebyshev systems
- 42A10 Trigonometric approximation

Keywords:
best uniform approximation; alternance points

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References:

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