Linear extremum problems for real polynomials and trigonometrical polynomials

(Corrigenda)

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1. The statement in my previous paper in this Arch. of Math. 5 (1954), p. 190, l. 2—4, is false. There is a co-ordinate theorem:

Theorem IIb*: *Given $n + 1$ arbitrary complex numbers $\gamma_0, \gamma_1, \dots, \gamma_n$ (γ_0 real) that do not vanish simultaneously, there exist exactly one real number $B \neq 0$, one integer m , $0 \leq m \leq 2n$, and one set of m significant numbers ζ_i , such that the γ_k are represented by (6.6) [with $B = \pm 2A$] for all $0 \leq k \leq n$.*

For the proof one replaces, as Dr. H. P. MULHOLLAND pointed out to me, the polynomials (4.3.) by the extremal polynomials

$$T = C \left(\sin \frac{x}{2} \right)^m \prod_1^m \sin \frac{x - \zeta_i}{2} \cdot T^*, \quad \int_E W |T| dx = 1, \quad I(T) > 0,$$

where $T^* \geq 0$ on E . Note that $x = 0$ and $x = 2\pi$ are not significant in the trigonometric case.

2. **Theorems III and III*:** After (5.7) and (6.8) add: where μ is locally monotone.

$d\mu = 0$ at ζ means, μ is constant near ζ ; $d\mu > 0$ (< 0) means $d\mu \neq 0$ and μ increases (decreases) near ζ .

3. Remark on p. 188 (bottom): $m \leq n + 1$; the ζ in (a, b) ; if $m = n + 1$ then P is also unique.

Remark on p. 190 (bottom): $m \leq 2n + 1$; the ζ in (a, b) are amongst the roots of T' , and T has period 2π ; if $m = 2n + 1$ then ...

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