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On Bernstein's Inequality for Entire Functions of Exponential Type

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Abstract. Polynomials p , satisfying the condition $p(z) \equiv z^n p(1/z)$, have been studied since well over thirty years. If p is such a polynomial, then $f(z) := p(e^{iz})$ is an entire function of exponential type n which satisfies the relation $f(z) \equiv e^{inz} f(-z)$. Thus, practically any result about entire functions f of exponential type, which satisfy the condition $f(z) \equiv e^{i\tau z} f(-z)$, can be specialized to obtain a result about polynomials p satisfying the condition $p(z) \equiv z^n p(1/z)$. In the present paper we obtain an extension of a result of Govil and Vetterlein, about the derivative of polynomials p satisfying $p(z) \equiv z^n p(1/z)$, to entire functions f of exponential type satisfying $f(z) \equiv e^{i\tau z} f(-z)$.

Keywords. Bernstein's inequality, entire functions, exponential type, uniformly almost periodic functions.

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