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# Normal Families and Uniqueness of Entire Functions and Their Derivatives

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摘要

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## Normal Families and Uniqueness of Entire Functions and Their Derivatives

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**Abstract** Let  $f$  be a nonconstant entire function; let  $k \geq 2$  be a positive integer; and let  $a$  be a nonzero complex number. If  $f(z) = a \rightarrow f'(z) = a$ , and  $f(z) = a \rightarrow f^{(k)}(z) = a$ , then either  $f = Ce^{\lambda z} + a$  or  $f = Ce^{\lambda z} + a(\lambda - 1)^{-1/\lambda}$ , where  $C$  and  $\lambda$  are nonzero constants with  $\lambda^{k-1} = 1$ . The proof is based on the Wiman-Valiron theory and the theory of normal families in an essential way.

**Key words** [entire function](#) [normal family](#) [unicity theorem](#)

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