FURTHER RESULTS ABOUT NORMAL CRITERIA AND SHARED VALUES FOR FAMILIES OF MEROMORPHIC FUNCTIONS

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Abstract. Let \( k \) be a positive integer and let \( \mathcal{F} \) be a family of meromorphic functions in the domain \( D \) all of whose zeros with multiplicity at least \( k \). Let \( P \) be a polynomial and \( P \) have at least one simple zero, \( p = \deg(P) \geq k + 2 \). If, for each pair \( f, g \in \mathcal{F} \), \( P(f)G_m(f) \) and \( P(g)G_m(g) \) share a nonzero constant \( b \) ignoring multiplicity in \( D \), where \( G(f) = P(f^{(k)}) + H(f) \) is a differential polynomial of \( f \) satisfying \( \frac{1}{\deg H} \leq \frac{\deg G}{\deg P} + 1 \) or \( \deg(H) - \deg(G) < qk \), and \( q > l \geq k + 1 \) is a positive integer, then \( \mathcal{F} \) is normal in \( D \).


Keywords and phrases: Normal family, Nevanlinna theory, sharing values, meromorphic function.

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