

Linear difference and differential operators preserving some \mathcal{A} -entire functions

by

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We apply Rossi's half-plane version of Borel's Theorem to study the zero distribution of linear combinations of \mathcal{A} -entire functions. This provides a unified way to study linear q -difference, difference and differential operators (with entire coefficients) preserving subsets of \mathcal{A} -entire functions, and hence obtain several analogous results for the Hermite-Poulain Theorem to linear finite (q -)difference operators with polynomial coefficients. The method also produces a result on the existence of infinitely many nonreal zeros of some differential polynomials of functions in certain sub-classes of \mathcal{A} -entire functions.

Joint work with Tuen Wai Ng