

BINOMIALS FORMULAE IN COMMUTATIVE LEIBNIZ ALGEBRAS WITH LOGARITHMS

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Abstract

Some generalizations of the binomial theorem for harmonic logarithms used in Umbral Calculus (cf. LR[1], RR[1]) and other shifted binomials are presented. Sections 1 and 2 consist basic facts concerning Algebraic Analysis, true shifts (in particular, multiplicative true shifts) and Leibniz algebras with logarithms, all without proofs (which can be found in the cited papers). In Section 3 a generalization of the binomial theorem of Umbral Calculus for harmonic logarithms in commutative Leibniz algebras with logarithms and a theorem about the corresponding invariant class of solutions to linear equations are given (also without proofs). Section 4 consists binomial theorems for other elements (with proofs).

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Key Words and Phrases: binomial formula, true shift, logarithm, harmonic logarithm, umbral calculus