



On Appell Polynomials Associated with k -Hypergeometric Functions and Their Properties

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Abstract

In recent years, hypergeometric functions have been used to introduce new generalizations of certain particular polynomial families. For example, confluent Appell polynomials have been defined by considering the confluent hypergeometric function, and various properties of these polynomials have been investigated [1]. Furthermore, the literature also mentions the k -analogue of hypergeometric functions [2, 3]. The purpose of this study is to analyze the k -analogue of Appell polynomials and introduce k -confluent Appell polynomials. A few of these polynomials corresponding characteristic characteristics are investigated, including its recurrence relation, explicit representation, summation formulas, determinant representation, and various properties. When we focus on the special case of k , these polynomials reduce to the confluent Appell polynomials. Additionally, subfamilies containing special cases of the determining function and their properties are given.

Keywords: Confluent Appell polynomials, hypergeometric functions, generating function.

References:

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