



The Symbolic Approach to Study the Family of Appell- λ Matrix Polynomials

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Abstract

In this research article, we introduced certain hybrid and matrix special polynomial associated to λ polynomials and established their properties. Further, the monomiality principle and differential equations for these newly introduced hybrid special polynomials are obtained. Also, we derive several intrinsic outcomes for the special cases of these polynomials. Some examples for the members belonging to the Appell- λ associated families are considered. Next, the determinantal representations of the special matrix polynomials and hybrid special polynomials associated with Appell- λ polynomials are obtained. The proposed approach in this article is symbolic. The Bernoulli- λ numbers and Euler- λ numbers are also obtained. The graphical representations are also given as concluding remarks.

Keywords: Trigonometric functions, symbolic operator, Appell polynomials, λ polynomials, determinant form.