



Some Identities on Generalized Bell-Based Appell Polynomials and Their Applications

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Abstract

Recently, several Bell based polynomials such as Bernoulli, Euler, Genocchi and Apostol versions were defined and investigated. The main aim of this paper is to introduce the generalized Bell-based Appell polynomials, which includes many new members in addition to the existing ones, and to investigate their properties including determinantal representation, recurrence relation, derivative formula, addition formula, monomiality principle and differential equation. Finally, we introduce the generalized Bell based Bernoulli-Euler, Bernoulli-Genocchi, Euler-Genocchi and Stirling-Appell polynomials of the second kind and state the corresponding results.

Keywords: Bell polynomials, generalized Bell-based Appell polynomials, summation formulae.

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