

## HERMITE BASED UNIFIED APOSTOL-BERNOULLI-EULER POLYNOMIALS

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**Abstract:** In this paper, we present a novel category of generalized Hermite based unified Apostol-Bernoulli-Euler polynomials and derive several implicit summation formulas through generating functions. These results extend some known summations and identities of unified Bernoulli-Euler polynomials of Apostol type, generalized Hermite-Bernoulli polynomials, and generalized Hermite-Euler polynomial.

**Keywords and Phrases:** Bernoulli polynomials, Euler polynomials, Hermite-Bernoulli polynomial of Apostol type, Hermite Euler polynomial of Apostol type, Hermite Bernoulli polynomial, Hermite Euler polynomial.

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### 1. Introduction

The specialized functions of mathematical physics have experienced notable advancement in recent years, particularly in their generalized and multi variable