

On the Series Expansion of The Gollnitz-Gordon Continued Fraction

Chen, Sin-Da; Huang, Sen-Shan

Abstract

We give combinatorial interpretations of the coefficients in the series expansions of the Gollnitz–Gordon continued fraction and its reciprocal. These combinatorial results enable us to determine the signs of the coefficients. At the end, we also derive some interesting identities involving the coefficients.

Key words : Rogers-Ramanujan continued fraction; Gollnitz-Gordon continued fraction; Jacobi's triple product identity; Euler's identity; Partition; Colored partition