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A generic formula for the values at the boundary points of monic classical orthogonal polynomials. (English)

In a previous paper the authors have determined a generic formula for the polynomial solution families of the differential equation of hypergeometric type

$$\sigma(x)y_n'' + 2(x)y_n' - \lambda_n y_n(x) = 0,$$

in this paper the authors give another such formula which enable present a generic formula for the values of monic classical orthogonal polynomials and their boundary points of definition.

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Keywords : differential equation of hypergeometric type; hypergeometric functions; hypergeometric identities; rodrigues type formula; weight function; pearson's distribution; Jacobi; Laguerre; Bessel and Hermite polynomials

Classification :

∗33C45 Orthogonal polynomials and functions of hypergeometric type

33C20 Generalized hypergeometric series

33F10 Symbolic computation of special functions