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خلاصه مقاله:

In this paper, new upper bounds for the ultraspherical coefficients of differentiable functions are presented. Using partial sums of ultraspherical polynomials, error approximations are presented to estimate differentiable functions. Also, an error estimate of the Gauss–Jacobi quadrature is obtained and we state an upper bound for Legendre coefficients which is sharper than upper bounds proposed so far. Numerical examples are given to assess the efficiency of the presented theoretical results.

کلمات کلیدی:

Ultraspherical coefficients, approximation error, upper bound, Gauss–Jacobi quadrature

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