

Dual Gauss–Legendre polynomials

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Abstract

We define and investigate two families of dual polynomials associated with the Gauss–Legendre polynomials, which have recently found interesting applications in computer graphics. Using the presented results, one can derive representations of the Gauss–Legendre polynomials, construct the dual bases for Lagrange bases and solve certain approximation problems arising, for example, in CAGD.

Keywords: dual bases, Gauss-Legendre polynomials, Jacobi polynomials, least-squares approximation, CAGD

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