

# Differential-recurrence properties of dual Bernstein polynomials

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## Abstract

New differential-recurrence properties of dual Bernstein polynomials are given which follow from relations between dual Bernstein and orthogonal Hahn and Jacobi polynomials. Using these results, a fourth-order differential equation satisfied by dual Bernstein polynomials has been constructed. Also, a fourth-order recurrence relation for these polynomials has been obtained; this result may be useful in the efficient solution of some computational problems.

*Keywords:* Differential equations; Recurrence relations; Bernstein basis polynomials; Dual Bernstein polynomials; Jacobi polynomials; Hahn polynomials; Generalized hypergeometric functions.

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