

ALTERNATIVE ORTHOGONAL POLYNOMIALS AND QUADRATURES*

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Dedicated to Ed Saff on the occasion of his 60th birthday

Abstract. A bidirectional orthogonalization algorithm is applied to construct sequences of polynomials, which are orthogonal over the interval $[0, 1]$ with the weighting function 1. Functional and recurrent relations are derived for the sequences that are the result of inverse orthogonalization procedure. Quadratures, generating by the sequences, are described. An example on approximation of the Cauchy problem is given.

Key words. orthogonal polynomial, recurrence relation, quadrature, initial value problem

AMS subject classifications. 33C45

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