The authors rely on the methods of ["Fourth-order difference equation for the first associated of classical discrete orthogonal polynomials," *A. Ronveaux, E. Godoy, A. Zarzo* and *I. Area*, J. Comput. Appl. Math. 90, No. 1, 45-50 (1998; Zbl 906.33003)] to derive a single fourth-order q-difference equation for the first associated of all q-classical orthogonal polynomials. The coefficients of the equation are specified in terms of the polynomials appearing in Pearson's q-difference equation defining the weight of the q-classical orthogonal polynomials in the q-Hahn tableau.

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Keywords : q-orthogonal polynomials; fourth-order q-difference equation

Citations : Zbl 906.33003

Classification:

- 33C45 Orthogonal polynomials and functions of hypergeometric type
- 33D45 Basic hypergeometric functions and integrals in several variables
- 39A10 Difference equations