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q-ORTHOGONAL POLYNOMIALS RELATED TO THE QUANTUM GROUP $U_q(so(5))$*

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Abstract. Orthogonal polynomials in two discrete variables related to finite-dimensional irreducible representations of the quantum algebra $U_q(\mathfrak{so}(5))$ are studied. The polynomials we consider here can be treated as two-dimensional q-analogs of Krawtchouk polynomials. Some properties of these polynomials are investigated: the difference equation of the Sturm-Liouville type, the weight function, the corresponding eigenvalues including the explicit description of their multiplicities.

Key words. quantum group, discrete orthogonal polynomials, eigenvalues

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