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**Alexander Rozenblyum\*** (ARozenblyum@CityTech.cuny.edu), Mathematics Department, New York City College of Technology, CUNY, 300 Jay Street, Brooklyn, NY 11201. *Representations of quantum group  $U_q(so(n))$  and  $q$ -orthogonal polynomials.*

We study the spectrum and eigenvectors of infinitesimal operators (generators) of irreducible representations of the quantum group  $U_q(so(n))$  which is the  $q$ -deformation of the universal enveloping algebra  $U(so(n))$ . Explicit formulas for the eigenvalues (including multiplicities) of the generators of representations are obtained. Corresponding eigenvectors are described in terms of certain types of orthogonal polynomials in many discrete variables. These polynomials may be considered as  $q$ -analogs of classical Krawtchouk and dual Hahn polynomials. (Received September 18, 2009)