1046-33-658   **Mourad E. H. Ismail*** (`ismail@math.ucf.edu`), Department of Mathematics, University of Central Florida, Orlando, FL 32828, and **Josef Obermaier**, Helmholtz Zentrum München, German Research Center for Environmental Heal, Institute of Biomathematics and Biometry, Munich, Germany. *Characterizations of Continuous and Discrete q-Ultraspherical Polynomials.*

We characterize the continuous q-ultraspherical polynomials in terms of the special form of the coefficients in the expansion $\mathcal{D}_q P_n(x)$ in the basis $\{P_n(x)\}$, $\mathcal{D}_q$ being the Askey-Wilson divided difference operator. The polynomials are assumed to be symmetric and the connection coefficients are multiples of the reciprocal of the square of the L^2 norm of the polynomials. A similar characterization is given for the discrete q-ultraspherical polynomials. A new proof of the evaluation of the connection coefficients for big q-Jacobi polynomials is given. (Received September 09, 2008)