

1086-33-1645

Michael J Schlosser* (michael.schlosser@univie.ac.at), Department of Mathematics,
University of Vienna, Nordbergstrasse 15, A-1090 Vienna, Austria. *Transformations for
multivariate basic hypergeometric series by linearization.*

We apply linearization formulae for families of orthogonal polynomials to deduce transformations for univariate and multivariate basic hypergeometric series. The method we utilize is simple: Products of several orthogonal polynomials are linearized by repeated application of linearization of a product of two orthogonal polynomials. For products of more than two polynomials this can be done in different ways (more precisely, in different order), after which taking coefficients transformation formulae are obtained. A particular nice example involves the continuous q -ultraspherical polynomials. Linearization of the product of three such polynomials in two different ways yields a non-trivial very-well-poised ${}_{14}\phi_{13}$ transformation formula which first appeared, by different means, in work of R. Langer, S. O. Warnaar and the author (SIGMA, 2009). (Received September 23, 2012)