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Characterizing Macdonald's Hypergeometric Series

Macdonald introduced multivariate hypergeometric series associated with Jack and Macdonald polynomials, extending the classical hypergeometric series and their zonal polynomial analogues arising in multivariate statistics. In this talk, we establish characterizations of these series by differential and q-difference equations. In the Jack setting, our results generalize earlier work on hypergeometric functions of matrix argument and subsequent developments of Yan and Kaneko. We also present q-difference characterizations in the Macdonald setting. These results provide a common perspective on hypergeometric series through the operators associated with Jack and Macdonald polynomials.