

Linear partial divided-difference equation satisfied by multivariate orthogonal polynomials on quadratic lattices

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In this work, fourth-order partial divided-difference equations satisfied by the bivariate Racah and the bivariate Wilson polynomials are derived. From our result, we recover the difference equation satisfied by the bivariate Racah polynomials given by J.S. Geronimo and P. Iliev. Moreover, we make a conjecture on the form of the partial divided-difference equation satisfied by any multivariate Racah or Wilson polynomials. To illustrate this conjecture, we consider the case of the trivariate continuous Hahn polynomials.