Transformations between Bivariate Polynomial Bases

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Abstract : It is well known that any interpolating polynomial P(x,y) on the vector space Pn,m of two-variable polynomials with degree less than n in terms of x and less than m in terms of y has various representations that depends on the basis of Pn,m that we select i.e. monomial, Newton and Lagrange basis etc. The aim of this paper is twofold: a) to present transformations between the coordinates of the polynomial P(x,y) in the aforementioned basis and b) to present transformations between these bases.

Keywords : bivariate interpolation polynomial, polynomial basis, transformations, interpolating polynomial
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