Mean Value Multipoint Multivariate Padé Approximations

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Abstract: Mean value interpolation by polynomials is one of the most natural generalizations of the univariate Lagrange interpolation to the multivariate case. Surprisingly, analogous generalizations of rational interpolation were not constructed. We present multipoint multivariate Padé approximation which generalizes both multivariate (in the scale of interpolations [1, pp.203] it corresponds to $m = k - 1$) and univariate (multipoint Padé approximation) cases.

Keywords: multipoint Padé approximation, rational interpolation, mean value interpolation, Lagrange interpolation.

References:

 [1]   B.D. Bojanov, H. Hakopian, B. Sahakian, Spline Functions and Multivariate Interpolations, Vol. 248 of Mathematics and Its Applications, Kluwer Academic Publishers, 1993.

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