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Bivariate Lagrange interpolation at the Padua points: the generating curve approach.
(English) [Zbl 1113.41001]

Authors’ summary: We give a simple, geometric and explicit construction of bivariate interpolation at certain points in a square (called Padua points), giving compact formulas for their fundamental Lagrange polynomials. We show that the associated norms of the interpolation operator, i.e., the Lebesgue constants, have minimal order of growth of $O((\log n)^2)$. To the best of our knowledge this is the first complete, explicit example of near optimal bivariate interpolation points.

Reviewer: S. M. Mazhar (Kuwait)

MSC:

41A05 Interpolation in approximation theory
41A63 Multidimensional problems
41A50 Best approximation, Chebyshev systems
41A55 Approximate quadratures

Keywords:
bivariate Lagrange interpolation; Padua points; Lebesgue constants

Software:

Padua2D; XuPad2D

Full Text: DOI

References:


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