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Multilevel quadratic spline integration.  (English) Zbl 07474410

Summary: In this paper we present new quadratures based on both quasi-interpolation and multilevel methods by using bivariate quadratic B-spline functions, defined on simple and multiple knot type-2 triangulations, improving classical quadratures, based on quasi-interpolating splines. We also prove some symmetry properties that simplify their expression, study their approximation performances, propose some numerical results and a comparison with other known multilevel spline quadratures.

MSC:
65D07 Numerical computation using splines
65D15 Algorithms for approximation of functions
41A15 Spline approximation
41A25 Rate of convergence, degree of approximation

Keywords:
spline integration; quasi-interpolation; multilevel B-splines; rate of convergence; degree of precision

Full Text: DOI

References:


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