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Numerical aspects of spaces of piecewise polynomials on triangulations. (English)

[Zbl 0628.65008](#)

Algorithms for approximation, Proc. IMA Conf., Shrivvenham/Engl. 1985, Inst. Math. Appl. Conf. Ser., New Ser. 10, 373-406 (1987).

[For the entire collection see [Zbl 0607.00009](#).]

Author's summary: Spaces of piecewise polynomials defined over triangulations of the plane play an important role in data fitting, in the solution of boundary-value problems for partial differential equations, and in computer-aided design. Such spaces seem to have been used less for data fitting than they deserve to be, perhaps because they are often considered to be too complicated to deal with numerically. The purpose of this paper is to help dispel this misconception by presenting a series of simple algorithms for dealing with such spaces on a digital computer.

Reviewer: [W.Böhm](#)

MSC:

[65D10](#) Numerical smoothing, curve fitting

[41A10](#) Approximation by polynomials

[41A63](#) Multidimensional problems (should also be assigned at least one other classification number from Section 41-XX)

Cited in **6** Documents

Keywords:

Spaces of piecewise polynomials; triangulations of the plane; data fitting; computer-aided design