Haußmann, Werner; Zeller, Karl

Bivariate approximation procedures. (English) Zbl 0591.41013

[For the entire collection see Zbl 0561.00015.]

This is an interesting and thought-provoking exposition of various approaches for bivariate approximation. Mentioned are Fourier-Chebyshev expansions, column approximations (like the spectral approximations of Orszag and others), and line approximations. Both of the latter two are proposed so as to take advantage of univariate approximation techniques. Also mentioned are Carathéodory-Féjer approximation and the decomposition of $h(x, y) = f(x) + g(y)$. The interested reader of this paper should also consult the survey paper of E. W. Cheney [Approximation Theory IV, Proc. Int. Conf., Tex. A&M Univ. 1983, 1-26 (1983; Zbl 0548.41015)].

Reviewer: G.D. Taylor

MSC:

41A30 Approximation by other special function classes
41A02 Research exposition (monographs, survey articles) pertaining to approximations and expansions
41A63 Multidimensional problems

Keywords:
bivariate approximation; Fourier-Chebyshev expansions; Carathéodory-Féjer approximation