

论文

AN ANALYSIS OF SPLITTING EXTRAPOLATION FOR MULTI DIMENSIONAL PROBLEMS

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摘要 The splitting extrapolation is an important technique for solving multidimensional problems. In the case that error $u-h$ has an asymptotic expansion of form $\sum c_{\alpha} h^{-(2\alpha)}$, where $\alpha=(\alpha_1, \dots, \alpha_s)$ and $h^{-\alpha}=h_1^{-(\alpha_1)} \dots h_s^{-(\alpha_s)}$, the method gives an approximation involving less computer storage and less computational work in comparison with the classical Richardson extrapolation. In this paper we present a recurrence rule of the splitting extrapolation and discuss its applications in the fields of multiple integrals, multidimensional integral equations, partial differential equations and singular perturbation problems.

关键词 [Splitting extrapolation asymptotic expansion](#)

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Key words [Splitting extrapolation asymptotic expansion](#) [recurrence algorithm](#) [multidimensional problems](#)

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