论文

INTERPOLATED FINITE ELEMENT METHODS FOR SECOND ORDER HYPERBOLIC EQUATIONS AND THEIR GLOBAL SUPERCONVERGENCE

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摘要   We develop the interpolated finite element method to solve second-order hyperbolic equations. The standard linear finite element solution is used to generate a newsolution by quadratic interpolation over adjacent elements. We prove that this interpolated finite element solution has superconvergence. This method can easily be applied to generating more accurate gradient either locally or globally, depending on the applications. This method is also completely vectorizable and parallelizable to take the advantages ofmodern computer structures. Several numerical examples are presented to confirm our theoretical analysis.

关键词   Interpolated finite element methods,hype

分类号

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Key words   Interpolated finite element methods   hyperbolic equations

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