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Original Articles

A Kind of Discrete Non-Reflecting Boundary Conditions for Varieties of Wave Equations

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摘要 In this paper, a new kind of discrete non-reflecting boundary conditions is developed. It can be used for a variety of wave equations such as the acoustic wave equation, the isotropic and anisotropic elastic wave equations and the equations for wave propagation in multi-phase and so on. In this kind of boundary conditions, the composition of all artificial reflected waves, but not the individual reflected ones, is considered and eliminated. Thus, it has a uniform formula for different wave equations. The velocity CA of the composed reflected wave is determined in the way to make the reflection coefficients minimal, the value of which depends on equations. In this paper, the costruction of the boundary conditions is illustrated and CA is found, numerical results are presented to illustrate the effectiveness of the boundary conditions.

关键词 Wave equations non-reflecting boundary conditions

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Key words Wave equations non-reflecting boundary conditions

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