

A FINITE DIFFERENCE METHOD FOR THE MODEL OF WHEEZES

收稿日期 1991-10-15 修回日期 网络版发布日期 接受日期

摘要

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Abstract In this paper, a finite difference scheme for the linear and nonlinear models of wheezes are given. The stability of the finite difference scheme for the linear model is obtained by using of von Neumann method. Moreover, the convergence and stability of the finite difference scheme for the nonlinear model are studied by the energy inequalities method. By some numerical computations, the relationships between angular frequency and wall position, fluid speed and amplitude are discussed. Finally, the author shows that the numerical results are coincided with Grotberg's theoretical results.

Key words

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