论文

关于随机选取法及其对不定常激波的计算

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摘要：

1976年Chorin把Glimm在[4]中构造非线性双曲型方程组解的方法做了一些改变,用于气体力学的欧勒方程组,并称之为随机选取法(以下简称RCM)。这个方法虽然与差分法一样地划网格,但与一般差分法有根本的不同。首先,它采用了随机数,其次,

关键词：

ON RANDOM CHOICE METHOD AND THE COMPUTATION OF UNSTEADY SHOCK WAVE

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Abstract:

A. J. Chorin and G. A. Sod. developed in these years the so called random choicemethod or Glimm-Chorin method. There are only a few papers on,this method.Further test or analysis of the method is desirable. The first author of this paperobtained a set of analytical solution with high accuracy for a problem involvingunsteady shock wave. In this paper this analytical solution is used to test the quatityof random choice method. The great influence of spatial steplength is observed. Therunning time per time step depends on the iteration when solving the Riemann pro-blem. Utilizing the monotonic and convex properties of an important function thenumber of iterations is no more than 4 or 5, thus running time is reduced. This isimportant when we generalize this method to two dimensional unsteady case. Someinteresting phenomena are summerized on the basis of many test runs.

Keywords:

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