双翼振动的预处理数值方法和
性能研究(一)

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摘　要：本文在多块耦合隐式求解方法的基础上,引入了预处理计算方法,使方程的各个特征值之间互相平衡,降低了方程系统的刚性,提高了数值方法的适应能力,通过 5m/s 圆柱绕流的计算结果与试验数据验证,得到了数值结果误差小于 5% 的工程允许范围。

关键词：NS 方程,预处理方法,数值模拟。

Preconditioning Numerical Method and Performance Investigation of Plunging Dual-Foils (1)

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Abstract：A preconditioning method is introduced to the NS solver based on the dual-time iteration for unsteady compressible flows. This method balances the eigenvalues of NS equations, reduces the stiffness of compressible NS solver for low-speed flow, and increases the capabilities of the solver for low speed flow. By comparing the numerical results for the flow around cylinder at 5m/s with the experiment data, a good agreement was obtained with a discrepancy of about 5%.

Key words：NS equations, preconditioning method,CFD.