



航空学报 » 1991, Vol. 12 » Issue (5) :316-320 DOI:

论文

最新目录 | 下期目录 | 过刊浏览 | 高级检索

<< Previous Articles | >>

二维非定常跨音速时间线化积分方程的推导

苏继超, 吴礼义

北京航空航天大学

DERIVATION OF THE TWO DIMENSIONAL TRANSONIC TIME LINERIZED INTEGRAL EQUATION

Su Jichao, Wu Liyi

Beijing University of AeronauticsAstronautics

摘要

参考文献

相关文章

Download: [PDF \(0KB\)](#) [HTML 0KB](#) Export: [BibTeX](#) or [EndNote \(RIS\)](#) [Supporting Info](#)

摘要

关键词: 跨音速流 非定常流 积分方程

Abstract: Abstract The study on unsteady transonic flows over wings is important for the analyses of the aeroelasticity of wings. In the case of low-frequency, small disturbance transonic flows around harmonically oscillating airfoils, a time-linearized low-frequency integral equation was derived by Nixon. Later a time-linearized integral equation available for arbitrary reduced frequency was presented by Lamah and Harris. But the integral equation is limited to the case of two dimensional subcritical flows. Recently further work was done with the method used by the present authors. Through introducing artificial viscosity, a time-linearized two dimensional integral equation available for transonic flows with shock was derived. In the present paper, an alternative approach on the time linearized integral equations are derived, and the far field characteristics of the two-dimensional transonic unsteady flow are analyzed. Unlike in the steady flows, the order of the unsteady flow quantities in the far field are of $O(1/r)$, lower than the counter parts in the steady flow, and the differentiation does not increase the orders of the magnitude of the far field quantities. Finally, an analytical expression for the far field is presented.

Keywords: transonic flow unsteady flow integral equation

Received 1989-11-12; published 1991-05-25

引用本文:

苏继超;吴礼义. 二维非定常跨音速时间线化积分方程的推导[J]. 航空学报, 1991, 12(5): 316-320.

Su Jichao;Wu Liyi. DERIVATION OF THE TWO DIMENSIONAL TRANSONIC TIME LINERIZED INTEGRAL EQUATION[J]. Acta Aeronautica et Astronautica Sinica, 1991, 12(5): 316-320.

Service

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ Email Alert
- ▶ RSS

作者相关文章

- ▶ 苏继超
- ▶ 吴礼义