عنوان مقاله:

D Numerical Investigation of Flow Field in Starting Stage of High Speed Wind Tunnels-۳

محل انتشار:

فصلنامه فرایندهای نوین در ساخت و تولید, دوره 2, شماره 2 (سال: 1392)

تعداد صفحات اصل مقاله: 8

نویسنده:

Mehdi Jahngiri - *M.Sc. Student of Mechanical Engineering, Malek Ashtar University of Technology*

خلاصه مقاله:

High speed wind tunnels are widely used in the study of fluid flow behavior around various objects. The air flow in the starting step of supersonic wind tunnels is transient including strong shock waves caused by the interaction of the tunnel main stream and the boundary layer at walls. To arrive in running step, the tunnel must be designed so as these waves leave immediately the test section. Otherwise, they will hinder the air flow through the tunnel. Accordingly, as a clear practical fact, the tunnels unable to pass the starting step are considered as unusable.In this paper, a ۳-D computational fluid dynamic analysis of the starting stage of a supersonic wind tunnel with a target Mach number of ۳ is performed. The results obtained in this work are in agreement with the expected physical behavior of the flow field .and can be applied as the design criterion of the high speed wind tunnels

کلمات کلیدی:

High speed wind tunnels, Shock waves, Starting stage