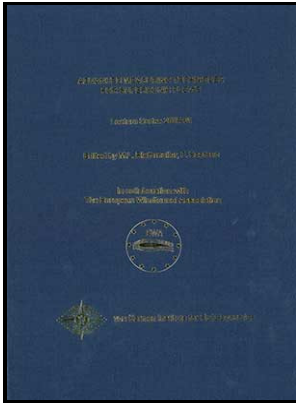


VKI hypersonic wind tunnels and associated measurement techniques

von Karman Institute for Fluid Dynamics - Investigation of Freestream Plasma Flow Produced by Inductively Coupled Plasma Wind Tunnel



Description: -

-
Hypersonic wind tunnels
Heat transferVKI hypersonic wind tunnels and associated measurement techniques
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46VKI hypersonic wind tunnels and associated measurement techniques

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Mach 10

Three dimensional finite element simulations are carried out to assess the performance of the force balance system in measuring the acceleration within the short test duration available in the shock tunnel. These disturbances were isolated and surrounded by an otherwise smooth boundary layer. While these results apply to the Longshot wind tunnel, the present methodology and sensitivity analysis can guide similar investigations for other hypersonic test facilities.

Applied radiation physics techniques for diagnostic evaluation of the plasma wind and thermal protection system critical parameters in aerospace re

Appl Opt 50 4 :A20—A28. The width of the entrance duct and therewith of the blade height is 225mm. TR ES 26388, El Segundo, CA, 1956.

Free

Inertial corrections are optimized, taking into account accelerometers transverse sensitivity effects, time lags, signal filtering or smoothing, and tuning for the inertia of the vibrating masses. The great progress has been achieved during the recent years and their critical technologies are still in an urgent need for further development.

Unsteady simulation of hypersonic flow around a heat flux probe in ground testing conditions

The wave numbers of the most amplified second-mode instabilities obtained with the linear stability theory matched the observations done with planar laser-induced fluorescence, suggesting it was the growth of such perturbations that led to the transitioning of the boundary layer. Surface pressure and heat-transfer measurements revealed how the intermittent behavior of the boundary layer produces the mean character of these quantities.

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