



Experimental Investigation of Aeroelastic Deformation of Slender Wings at Supersonic Speeds Using a Video Model Deformation Measurement Technique

By Gary E Erickson

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.A video-based photogrammetric model deformation system was established as a dedicated optical measurement technique at supersonic speeds in the NASA Langley Research Center Unitary Plan Wind Tunnel. This system was used to measure the wing twist due to aerodynamic loads of two supersonic commercial transport airplane models with identical outer mold lines but different aeroelastic properties. One model featured wings with deflectable leading- and trailing-edge flaps and internal channels to accommodate static pressure tube instrumentation. The wings of the second model were of single-piece construction without flaps or internal channels. The testing was performed at Mach numbers from 1.6 to 2.7, unit Reynolds numbers of 1.0 million to 5.0 million, and angles of attack from -4 degrees to +10 degrees. The video model deformation system quantified the wing aeroelastic response to changes in the Mach number, Reynolds number concurrent with dynamic pressure, and angle of attack and effectively captured the differences in the wing twist characteristics between the two test articles.



READ ONLINE
[5.87 MB]

Reviews

A top quality publication along with the font used was intriguing to read. I really could comprehend everything using this written e book. Its been designed in an remarkably straightforward way and it is only after i finished reading through this publication by which basically altered me, modify the way i believe.

-- **Cathrine Larkin Sr.**

Very useful to all of group of people. I actually have read through and so i am certain that i will planning to study yet again once again down the road. I am just very easily can get a satisfaction of looking at a created book.

-- **Mark Bernier**