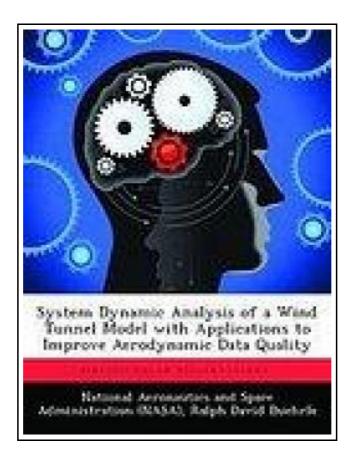
System Dynamic Analysis of a Wind Tunnel Model with Applications to Improve Aerodynamic Data Quality



Filesize: 3.94 MB

Reviews

Good electronic book and valuable one. Of course, it is actually perform, still an interesting and amazing literature. You may like how the author publish this pdf. (Lisette Schimmel)

SYSTEM DYNAMIC ANALYSIS OF A WIND TUNNEL MODEL WITH APPLICATIONS TO IMPROVE AERODYNAMIC DATA QUALITY



Biblioscholar Mrz 2013, 2013. Taschenbuch. Book Condition: Neu. 246x189x8 mm. This item is printed on demand - Print on Demand Neuware - The research investigates the effect of wind tunnel model system dynamics on measured aerodynamic data. During wind tunnel tests designed to obtain lift and drag data, the required aerodynamic measurements are the steady-state balance forces and moments, pressures, and model attitude. However, the wind tunnel model system can be subjected to unsteady aerodynamic and inertial loads which result in oscillatory translations and angular rotations. The steady-state force balance and inertial model attitude measurements are obtained by filtering and averaging data taken during conditions of high model vibrations. The main goals of this research are to characterize the effects of model system dynamics on the measured steady-state aerodynamic data and develop a correction technique to compensate for dynamically induced errors. Equations of motion are formulated for the dynamic response of the model system subjected to arbitrary aerodynamic and inertial inputs. The resulting modal model is examined to study the effects of the model system dynamic response on the aerodynamic data. In particular, the equations of motion are used to describe the effect of dynamics on the inertial model attitude, or angle of attack, measurement system that is used routinely at the NASA Langley Research Center and other wind tunnel facilities throughout the world. This activity was prompted by the inertial model attitude sensor response observed during high levels of model vibration while testing in the National Transonic Facility at the NASA Langley Research Center. The inertial attitude sensor cannot distinguish between the gravitational acceleration and centrifugal accelerations associated with wind tunnel model system vibration, which results in a model attitude measurement bias error. Bias errors over an order of magnitude greater than the required device accuracy were found in...

Read System Dynamic Analysis of a Wind Tunnel Model with Applications to Improve Aerodynamic Data Quality Online

Download PDF System Dynamic Analysis of a Wind Tunnel Model with Applications to Improve Aerodynamic Data Quality

You May Also Like



Psychologisches Testverfahren

Reference Series Books LLC Nov 2011, 2011. Taschenbuch. Book Condition: Neu. 249x191x7 mm. This item is printed on demand - Print on Demand Neuware - Quelle: Wikipedia. Seiten: 100. Kapitel: Myers-Briggs-Typindikator, Keirsey Temperament Sorter, DISG,... Save ePub »



Programming in D

Ali Cehreli Dez 2015, 2015. Buch. Book Condition: Neu. 264x182x53 mm. This item is printed on demand - Print on Demand Neuware - The main aim of this book is to teach D to readers... Save ePub »



The genuine book marketing case analysis of the the lam light. Yin Qihua Science Press 21.00(Chinese Edition)

paperback. Book Condition: New. Ship out in 2 business day, And Fast shipping, Free Tracking number will be provided after the shipment.Paperback. Pub Date :2007-01-01 Pages: 244 Publisher: Science Press Welcome Our service and quality...

Save ePub »



Tinga Tinga Tales: Why Lion Roars - Read it Yourself with Ladybird

Paperback. Book Condition: New. Not Signed; This is a Tinga Tinga tale inspired by traditional stories from Africa. Lion is king of Tinga Tinga but he can't roar! Can his friend Flea help Lion to...

Save ePub »



Sport is Fun (Red B) NF

Pearson Education Limited. Paperback. Book Condition: new. BRAND NEW, Sport is Fun (Red B) NF, Dianne Irving, This title is part of Pearson's Bug Club - the first whole-school reading programme that joins books and...

Save ePub »