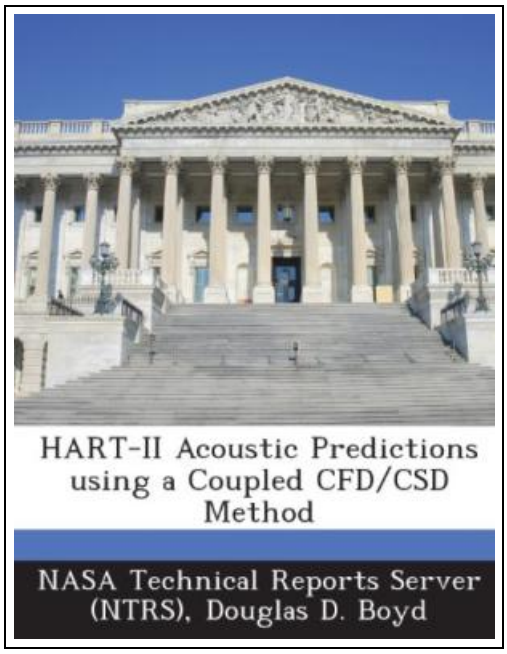
Hart-II Acoustic Predictions Using a Coupled CfdCSD Method



Filesize: 2.54 MB

Reviews

This ebook is wonderful. It really is writter in simple words and phrases rather than difficult to understand. Your daily life span will be change the instant you complete looking at this pdf.
(Kale Bayer)

HART-II ACOUSTIC PREDICTIONS USING A COUPLED CFDCSD METHOD

Bibliogov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 22 pages. Dimensions: 9.7in. x 7.4in. x 0.1in.This paper documents results to date from the Rotorcraft Acoustic Characterization and Mitigation activity under the NASA Subsonic Rotary Wing Project. The primary goal of this activity is to develop a NASA rotorcraft impulsive noise prediction capability which uses first principles fluid dynamics and structural dynamics. During this effort, elastic blade motion and co-processing capabilities have been included in a recent version of the computational fluid dynamics code (CFD). The CFD code is loosely coupled to computational structural dynamics (CSD) code using new interface codes. The CFDCSD coupled solution is then used to compute impulsive noise on a plane under the rotor using the Ffowcs Williams-Hawkings solver. This code system is then applied to a range of cases from the Higher Harmonic Aeroacoustic Rotor Test II (HART-II) experiment. For all cases presented, the full experimental configuration (i. e. , rotor and wind tunnel sting mount) are used in the coupled CFDCSD solutions. Results show good correlation between measured and predicted loading and loading time derivative at the only measured radial station. A contributing factor for a typically seen loading mean-value offset between measured data and predictions data is examined. Impulsive noise predictions on the measured microphone plane under the rotor compare favorably with measured mid-frequency noise for all cases. Flow visualization of the BL and MN cases shows that vortex structures generated in the prediction method are consist with measurements. Future application of the prediction method is discussed. This item ships from La Vergne,TN. Paperback.

Other eBooks