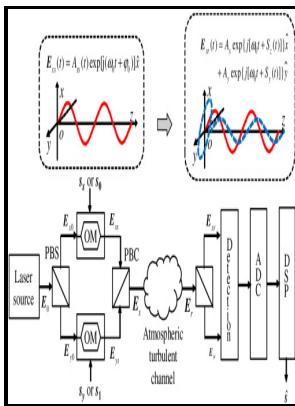


# Theory of the response of airplanes to random atmospheric turbulence

Institute of Aerophysics - DYNAMICS OF FLIGHT STABILITY AND CONTROL BERNARD ETKIN PDF

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Bildungs- und kulturgeschichtliche Beiträge für Berlin und Brandenburg -- Bd. 1  
UTIA report -- no.54theory of the response of airplanes to random atmospheric turbulence  
Notes: Includes bibliographical references.  
This edition was published in 1958

Tags: #Computed #lateral #power #spectral #density #response #of #conventional #and #STOL #airplanes #to #random #atmospheric #turbulence

**Computed lateral power spectral density response of conventional and STOL airplanes to random atmospheric turbulence**

McRuer, Duane: Human Dynamics and Pilot-Induced Oscillations. The rotor is assumed to be rigid and is three-bladed for simplicity.

## The Response of an Airplane to Random Atmospheric Disturbances

Explanation of the anomalous spin behavior of satellites with long, flexible antennae. The effect of the interaction of longitudinal, normal, and lateral gusts on the wing stresses is also considered.

## Computed lateral power spectral density response of conventional and STOL airplanes to random atmospheric turbulence

In addition, this report covers the use of filtered noise as a modeling approximation for the turbulence input and provides the necessary data for modeling the turbulence inputs for a wide range of turbine sizes. Printed in Black and White. First, the turbulent velocity field is characterized by a model which provides the correlation between velocity components at different spatial positions and at different times.

## Computed lateral power spectral density response of conventional and STOL airplanes to random atmospheric turbulence



Filesize: 38.59 MB

Thesis, Volume 1, Massachusetts Inst. The main conclusion is that various coherent turbulent structures that form under different levels of atmospheric stability and surface roughness have important effects on wind turbine structural response, power production, and wake evolution.

## **DYNAMICS OF FLIGHT STABILITY AND CONTROL BERNARD ETKIN PDF**

In this work we investigate the wakes from a full-scale wind turbine of rotor diameter 80 m and a subscale wind turbine of rotor diameter of 27 m using large-eddy simulation with the turbine blades and nacelle modeled using actuator surface models.

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