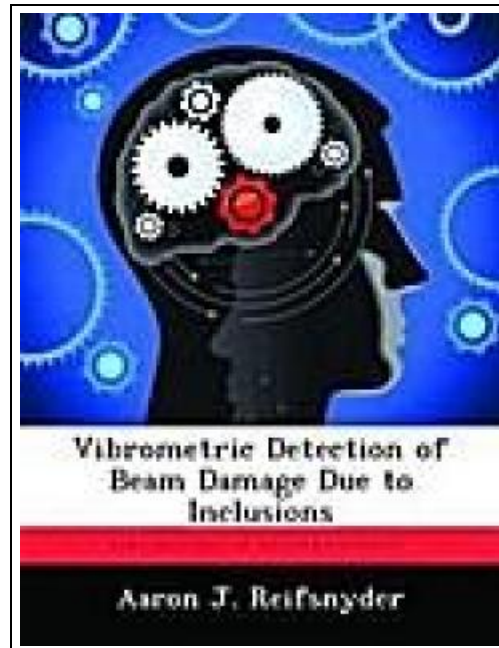


## Vibrometric Detection of Beam Damage Due to Inclusions



Filesize: 5.52 MB

### ***Reviews***

*This publication is worth acquiring. It is actually full of knowledge and wisdom You are going to like the way the blogger publish this book.*

*(Prof. Stanley Hermiston)*

## VIBROMETRIC DETECTION OF BEAM DAMAGE DUE TO INCLUSIONS



To get **Vibrometric Detection of Beam Damage Due to Inclusions** eBook, make sure you follow the link beneath and download the ebook or gain access to additional information which are have conjunction with VIBROMETRIC DETECTION OF BEAM DAMAGE DUE TO INCLUSIONS book.

Biblioscholar Okt 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x8 mm. This item is printed on demand - Print on Demand Neuware - The Air Force Institute of Technology, in conjunction with the Structural Health Monitoring branch of the Air Force Research Laboratory, is researching methods of determining effects of notch location and size on beam structures using modal frequency analysis. This thesis explores the ability to detect included notches of varying magnitudes and locations within the frequency domain of an isotropic cantilever beam. A series of experiments employing centerline-notched 2024 T3 and 2024 O aluminum beams was used to determine whether natural frequency measurement in beam structures is a valid mechanism for damage detection. Each specimen was excited by a strain actuator and the dynamic beam response measured using a laser Doppler vibrometer, thereby obtaining eigenvalues and eigenvectors for each case. Results are analyzed for frequency degradation trends based on location, notch length, and vibration mode. Correlation is made between experimentally observed values, ABAQUS modeling, and a series of MATLAB predictions utilizing a finite element solution approach developed by Perel and Palazotto (2002). It is determined that modal frequency analysis is an adequate global indicator of damage presence and magnitude, which reduces global stiffness. Damage location is not easily identifiable from the data. It is also determined that ABAQUS and the MATLAB solution approach are accurate to within 10% of experimental resonant frequency values for short notch lengths and low vibration modes, but highly deviant from experiment for longer notch lengths and higher modes. Residual stresses contained in the 2024 T3 specimens from cold working are determined to have minimal effect on beam dynamics. 132 pp. Englisch.



[Read Vibrometric Detection of Beam Damage Due to Inclusions Online](#)



[Download PDF Vibrometric Detection of Beam Damage Due to Inclusions](#)

## See Also



**[PDF] Read Write Inc. Phonics: Orange Set 4 Storybook 2 I Think I Want to be a Bee**

Access the hyperlink beneath to read "Read Write Inc. Phonics: Orange Set 4 Storybook 2 I Think I Want to be a Bee" PDF document.

[Save Book »](#)



**[PDF] Read Write Inc. Phonics: Purple Set 2 Non-Fiction 4 What is it?**

Access the hyperlink beneath to read "Read Write Inc. Phonics: Purple Set 2 Non-Fiction 4 What is it?" PDF document.

[Save Book »](#)



**[PDF] Your Pregnancy for the Father to Be Everything You Need to Know about Pregnancy Childbirth and Getting Ready for Your New Baby by Judith Schuler and Glade B Curtis 2003 Paperback**

Access the hyperlink beneath to read "Your Pregnancy for the Father to Be Everything You Need to Know about Pregnancy Childbirth and Getting Ready for Your New Baby by Judith Schuler and Glade B Curtis 2003 Paperback" PDF document.

[Save Book »](#)



**[PDF] Daddyteller: How to Be a Hero to Your Kids and Teach Them What s Really by Telling Them One Simple Story at a Time**

Access the hyperlink beneath to read "Daddyteller: How to Be a Hero to Your Kids and Teach Them What s Really by Telling Them One Simple Story at a Time" PDF document.

[Save Book »](#)



**[PDF] Becoming Barenaked: Leaving a Six Figure Career, Selling All of Our Crap, Pulling the Kids Out of School, and Buying an RV We Hit the Road in Search Our Own American Dream. Redefining What It Meant to Be a Family in America.**

Access the hyperlink beneath to read "Becoming Barenaked: Leaving a Six Figure Career, Selling All of Our Crap, Pulling the Kids Out of School, and Buying an RV We Hit the Road in Search Our Own American Dream. Redefining What It Meant to Be a Family in America." PDF document.

[Save Book »](#)



**[PDF] The Day Lion Learned to Not Be a Bully: Aka the Lion and the Mouse**

Access the hyperlink beneath to read "The Day Lion Learned to Not Be a Bully: Aka the Lion and the Mouse" PDF document.

[Save Book »](#)