

Waveletbased Vibration Control Of Smart Buildings And Bridges

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Waveletbased Vibration Control Of Smart

Based on the groundbreaking work of Hojiti Adeli, the book introduces the new mathematical concept of wavelets into the field of structural vibration control. It presents a new control algorithm for robust control of smart civil structures subjected to destructive environmental forces, such as earthquakes and wind.

Wavelet-Based Vibration Control of Smart Buildings and ...

Presenting a highly innovative, modern approach verging on the futuristic, Wavelet-Based Vibration Control of Smart Buildings and Bridges discusses a new generation of building and bridge structures that not only withstands [generation is singular] the destructive effects of nature but is also impact and explosion resistant.

Wavelet-based Vibration Control of Smart Buildings and ...

Adeli and Kim (2004) and Kim and Adeli (2005b) developed wavelet-based algorithms for vibration control in smart structures. Wavelet-based algorithms were also found suitable for vibration control...

Hybrid Control of Smart Structures Using a Novel Wavelet ...

Azimi (2017) designed structural vibration control utilizing smart materials and devices. They stated that the wavelet-based fuzzy logic control works better as compared with the classical fuzzy...

(PDF) Design of Structural Vibration Control Using Smart ...

This paper proposes a novel individual blade pitch control strategy with the objective of reducing blade vibration. A wavelet linear quadratic regulator (LQR) control algorithm, which is an advanced modification of the conventional LQR controller, has been developed for this purpose.

Wavelet-based individual blade pitch control for vibration ...

Adeli / Kim. Wavelet-Based Vibration Control of Smart Buildings and Bridges, 2009, Buch, 978-1-4200-8923-3. Bücher schnell und portofrei

Adeli / Kim | Wavelet-Based Vibration Control of Smart ...

In this study, a finite element formulation based on the four-variable refined plate theory (RPT) is presented for forced vibration analysis of laminated viscoelastic composite plates integrated with a piezoelectric layer. To the best of the authors' knowledge, this is the first time that the proposed approach is extended for study of the dynamic behavior of the smart viscoelastic plate. The ...

Forced vibration of smart laminated viscoelastic plates by ...

structural vibration control using smart materials and devices and to elucidate the factors. determining their robustness, feasibility, and adaptability for earthquake-resistant and resilient. buildings. The study mainly includes a) integrated wavelet-based vibration control with damage.

DESIGN OF STRUCTURAL VIBRATION CONTROL USING SMART ...

Active vibration control to suppress structural vibration of the smart hull structure was investigated based on optimized actuator configurations. Advanced anisotropic piezoelectric composite actuator, Macro-Fiber Composite (MFC), was used for the vibration control.

Vibration control of smart hull structure with optimally ...

Piezoelectric devices present an important new group of sensors and actuators for active vibration control systems [1, 2, 3, 4]. Indeed, this technology allows to developing spatially distributed... A Wavelet-Based Approach for Dynamic Control of Intelli-Gent Piezoelectric Plate Structures with Linear and Non-Linear Deformation | SpringerLink

A Wavelet-Based Approach for Dynamic Control of Intelli ...

To compute the control in the time domain, a multiresolution analysis (MRA)-based discrete wavelet transform (DWT) is used, with the application of frequency band-dependent gains to different filtered signals at different frequency bands.

Wavelet-based individual blade pitch control for vibration ...

Based on the groundbreaking work of Hojiti Adeli, this book introduces the mathematical concept of wavelets into the field of structural vibration control. It presents a control algorithm for robust control of smart civil structures subjected to destructive environmental forces, such as earthquakes and wind.

Wavelet-based vibration control of smart buildings and ...

Major earthquakes in recent years have highlighted the big concern of modern seismic design concept for the resilience of buildings. The overall goals of this thesis aim to design structural vibration control using smart materials and devices and to elucidate the factors determining their robustness, feasibility, and adaptability for earthquake-resistant and resilient buildings.

Design of Structural Vibration Control Using Smart ...

About this journal. The Journal of Vibration and Control is a peer-reviewed journal of analytical, computational and experimental studies of vibration phenomena and their control. The scope encompasses all linear and nonlinear vibration phenomena and covers topics such as: vibration and control of structures and machinery, signal analysis, aeroelasticity, neural networks, structural control ...

Journal of Vibration and Control: SAGE Journals

SMC is a nonlinear control methodology that forces the structural system to slide along surfaces or boundaries; hence this control algorithm is naturally robust with respect to parametric uncertainties of a structure. Early attempts at protecting vibration-sensitive equipment were based on the use of existing control algorithms as described above.

Control of equipment isolation system using wavelet-based ...

Active and adaptive control of sound and vibration: Analysis, design, smart structures and materials; Passive control of sound and vibration: Damping processes, design optimization, meta-materials, materials for optimum damping; Inverse problems in acoustics and vibration (linear); techniques for source or system identification; statistical methods

JSV | Journal of Sound and Vibration | Vol 443, Pages 1 ...

Jeong, Se Na, Kim, Tae Ho, Kim, Chang Ho, and Lee, Yong Bok. "Vibration Control of a High Speed Rotor Supported by the Combined Smart Bearing." Proceedings of the ASME/STLE 2011 International Joint Tribology Conference. ASME/STLE 2011 Joint Tribology Conference. Los Angeles, California, USA. October 24–26, 2011. pp. 333-335. ASME.

Vibration Control of a High Speed Rotor Supported by the ...

The vibration control experimental framework for the piezoelectric smart structure used in this study is shown in Figure 1, which includes the PEAs and sensors and a main structural plate. For structural vibration, the dynamic signal analyzer was used to produce the vibration signal.

Active multimode vibration control of a smart structure ...

Vibration Control and Actuation of Large-Scale Systems gives a systematically and self-contained description of the many facets of envisaging, designing, implementing, or experimentally exploring advanced vibration control systems. The book is devoted to the development of mathematical methodologies for vibration analysis and control problems ...