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Nota di contenuto	Structural Health Monitoring: Research and Applications; Preface, Committees and Sponsors; Table of Contents; A One Stage Damage Detection Technique Using Spectral Density Analysis and Parallel Genetic Algorithms; Application of Wavelet Parameters for Impact Damage Detection in Plates; Damage Identification and Assessment in Tapered Sandwich Structures Using Guided Waves; A Framework for Reliability Assessment of an In-Service Bridge Using Structural Health Monitoring Data; Modeling of Environmental Effects for Vibration-Based SHM Using Recursive Stochastic Subspace Identification Analysis Modal Acoustic Emission Investigation for Progressive Failure Monitoring in Thin Composite Plates under Tensile TestLaser Lock-In Thermography for Fatigue Crack Detection; In Situ Blade Deflection Monitoring of a Wind Turbine Using a Wireless Laser Displacement Sensor Device within the Tower; Guided Wavefield Images Filtering for Damage Localization; Strain as Damage Indicator for Truss and Frame Structures; Guided Waves for Aircraft Panel Monitoring; Time-Domain Hybrid Global-Local Prediction of Guided Waves Interaction with

Damage

A Robust Procedure for Damage Detection from Strain Measurements Based on Principal Component AnalysisPrediction and Measurement of Lamb Wave from Debondings at Structural Features in Composite Laminates; Substructure Damage Detection Method for Shear Structure Using Sub-Time Series and ARMAX; Structural Design and Verification of Composite Pressure Vessels for Submarine External Stowage; Verification of Structural Health Assessment Method Using Full-Scale Collapse Test of Four-Story Steel Building; Damage Characterisation of Carbon Fibre Reinforced Composite Plate Using Acoustic Emission Nonlinear Properties of Lamb Waves under Modulation of Fatigue Damage: Finite Element Simulation with Experimental ValidationSingle Transducer Pair Lamb Wave Time Reversal for Damage Detection in Composite Laminates; Development of the Damage Detection Method for CFRP Structures Using Distributed BOCDA Optical Fiber Sensor; Dynamic Displacement Estimation from Acceleration Measurements Using a Wireless Smart Sensor; Optimal Structural Health Monitoring Feature Selection via Minimized Performance Uncertainty; Imaging Damage Using Mixed Passive and Active Sensors

Distributed Strain Monitoring for Damage Evolution in CFRP Bolted Structures with Embedded Optical FibersLamb Wave Based Monitoring of Fatigue Crack Growth Using Principal Component Analysis; Structural Health Monitoring of Space Vehicle Thermal Protection Systems; Active Evacuation Guidance and Structural Health Monitoring System for Buildings Using Sensor Agent Robots; Sensor Agent Robot with Servo-Accelerometer for Structural Health Monitoring; Damage Assessment Methodology for Nonstructural Components with Inspection Robot; Flight Tests Performed by EMBRAER with SHM Systems

Scattering Matrix Approach to Informing Damage Monitoring and Prognosis in Composite Bolted Connections

Sommario/riassunto

Structural health monitoring has international relevance across maritime, aerospace and infrastructure domains for both civilian and military end-users. The aim of this book is to collect the most recent developments and research knowledge on this topic, with focusing in particular on the Asia-Pacific region. The collection covers 54 peer reviewed papers covering up-to-date research results in structural health monitoring. Fifty-six papers from the December 2012 workshop present new developments in monitoring aircraft structure conditions, civil structures, wind turbines, pipelines, and buildi