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Nota di contenuto	Cover; Title Page; Copyright; Contents; Preface; Chapter 1 Introduction; 1.1 Why Conduct Vibration Test of Structures?; 1.2 Techniques Available for Vibration Testing of Structures; 1.3 Forced Vibration Testing Methods; 1.4 Vibration Testing of Civil Engineering Structures; 1.5 Parameter Estimation Techniques; 1.6 Brief History of OMA; 1.7 Modal Parameter Estimation Techniques; 1.8 Perceived Limitations of OMA; 1.9 Operating Deflection Shapes; 1.10 Practical Considerations of OMA; 1.11 About the Book Structure; References; Chapter 2 Random Variables and Signals; 2.1 Probability 2.1.1 Density Function and Expectation2.1.2 Estimation by Time Averaging; 2.1.3 Joint Distributions; 2.2 Correlation; 2.2.1 Concept of Correlation; 2.2.2 Autocorrelation; 2.2.3 Cross Correlation; 2.2.4 Properties of Correlation Functions; 2.3 The Gaussian Distribution; 2.3.1 Density Function; 2.3.2 The Central Limit Theorem; 2.3.3 Conditional Mean and Correlation; References; Chapter 3 Matrices and Regression; 3.1 Vector and Matrix Notation; 3.2 Vector and Matrix Algebra; 3.2.1 Vectors and Inner Products; 3.2.2 Matrices and Outer Products; 3.2.3 Eigenvalue Decomposition

Sommario/riassunto

Comprehensively covers the basic principles and practice of Operational Modal Analysis (OMA).Covers all important aspects that are needed to understand why OMA is a practical tool for modal testingCovers advanced topics, including closely spaced modes, mode shape scaling, mode shape expansion and estimation of stress and strain in operational responsesDiscusses practical applications of Operational Modal AnalysisIncludes examples supported by MATLAB® applicationsAccompanied by a website hosting a MATLAB® toolbox for Operational Modal Analysis