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Contributions present important theory behind relevant experimental methods as well as application and technology. Topical authors emphasize and dissect proven methods and offer detail beyond a simple review of the literature.

Additionally, chapters cover practical needs of scientists and engineers who are new to the field. In most cases, neither the pertinent theory nor, in particular, the practical issues have been presented formally in an academic textbook. Each chapter in the Handbook represents a 'must read' for someone new to the subject or for someone returning to the field after an absence. Reference lists in each chapter consist of the seminal papers in the literature.

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Editorial Review

About the Author

Dr. Allemang is a member of the faculty of the Mechanical Engineering Program in the School of Dynamic Systems, University of Cincinnati, where he currently also serves as Director of the Structural Dynamics Research Laboratory (UC-SDRL). Dr. Allemang has been actively involved in the area of experimental modal analysis for over 35 years, pioneering the use of multiple input, multiple output estimation of frequency response functions, developing the concept of cyclic averaging, formulating the modal assurance criterion (MAC) and the enhanced frequency response function and reformulating modal parameter estimation algorithms into the unified matrix (coefficient) polynomial approach (UMPA). He has authored or co-authored over 140 technical articles, including chapters for 2 different handbooks and numerous refereed articles.

Peter Avitabile is the Director of the Modal Analysis and Controls Laboratory at the University of Massachusetts, Lowell and Professor in the Mechanical Engineering Department. Dr. Avitabile joined the University in 1985 after having worked in industry for over 10 years. His industrial and university experience of over 30 years includes analytical and experimental modal analysis, signal processing and finite element modeling. His main area of research is structural dynamics specializing in the areas of modeling, testing and correlation of analytical and experimental models along with advanced applications for developing structural dynamic models.

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