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| Descrizione fisica | 1 online resource (XXV, 527 p. 1026 illus., 988 illus. in color.) |
| Collana | Springer Tracts in Mechanical Engineering, , 2195-9870 |
| Disciplina | 620.00151 |
| Soggetti | Machinery<br>Signal processing<br>Multibody systems<br>Vibration<br>Mechanics, Applied<br>Machinery and Machine Elements<br>Digital and Analog Signal Processing<br>Multibody Systems and Mechanical Vibrations |
| Lingua di pubblicazione | Inglese |
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| Nota di contenuto | Introduction -- Principles of condition monitoring systems -- Vibration components generated by rotary machinery -- Signal processing algorithms -- Vibration-based condition assessment methods -- Synthetic signals generation methods -- Simulating operational signals -- Simulating long-term machine fault development -- Analysis of long-term fault development -- Connecting MATLAB® to CMS -- Development of interface for direct data access (DDA) -- Prototype tools. |
| Sommario/riassunto | This book offers the first comprehensive and practice-oriented guide to condition monitoring algorithms in MATLAB®. After a concise introduction to vibration theory and signal processing techniques, the attention is moved to the algorithms. Each signal processing algorithm is presented in depth, from the theory to the application, and including extensive explanations on how to use the corresponding toolbox in MATLAB®. In turn, the book introduces various techniques for synthetic signals generation, as well as vibration-based analysis techniques for |

large data sets. A practical guide on how to directly access data from industrial condition monitoring systems (CMS) using MATLAB® .NET Libraries is also included. Bridging between research and practice, this book offers an extensive guide on condition monitoring algorithms to both scholars and professionals. “Condition Monitoring Algorithms in MATLAB® is a great resource for anyone in the field of condition monitoring. It is a unique as it presents the theory, and a number of examples in Matlab®, which greatly improve the learning experience. It offers numerous examples of coding styles in Matlab, thus supporting graduate students and professionals writing their own codes." Dr. Eric Bechhoefer Founder and CEO of GPMS Developer of the Foresight MX Health and Usage Monitoring System.