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Nota di contenuto	1.Rotordynamic Modal Testing via Journal Bearing Lubricant Film – An Experimental Validation -- 2.Problems of Development of Tribotronics -- 3.A Presentation of Control Theory Applied to the Design of Controllable Segmented Gas Foil Bearings -- 4.Tilting-Pad Journal Bearing with Active Pads: A Way of Attenuating Rotor Lateral Vibrations -- 5.Studying the Effect of Viscous Friction Minimization in Actively Lubricated Journal Hybrid Bearings -- 6.On The Feedback Control of a Rotor System with Active Flexible Bearings -- 7.A novel monolithic shape-morphing bearing for real-time NVH control -- 8.Application of Squeeze film dampers -- 9.Investigation of Active Configuration in Gas Foil Bearings for Stable Ultra High-Speed Operation -- 10.Gyroid lattice structures for Tilting Pad Journal Bearings -- 11.Behavior of an Active Magnetic Bearing as a Stern Tube Bearing: A first approach via simulations -- 12.On the Stability Margins of Parametrically Excited

Sommario/riassunto

This book reports on cutting-edge experimental and numerical findings related to the application of active bearings, including smart ones, in rotating machinery. It discusses their role in improving stability and control of rotor systems and reports in depth on the corresponding modeling and control approaches. Chapters are based on peer-reviewed contributions to the 1st Workshop on Active Bearings in Rotating Machinery (ABROM 2022), held on June 29- 30, 2022, in Athens, Greece, and organized in collaboration between the School of Mechanical Engineering of The National Technical University of Athens (NTUA) and the Faculty of Mechanical Engineering of Karlsruhe Institute of Technology (KIT). In connection with the increasing digital transformation of machine elements, this book offers a timely perspective and extensive information on testing methods and experimental procedures involved in the development of intelligent rotors for industrial applications.
