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Titolo	Modern Dynamic Reliability Analysis for Multi-state Systems : Stochastic Processes and the Lz-Transform // by Anatoly Lisnianski, Ilia Frenkel, Lev Khvatskin
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Descrizione fisica	1 online resource (xiv, 184 pages) : illustrations
Collana	Springer Series in Reliability Engineering, , 1614-7839
Disciplina	620.00452
Soggetti	Quality control Reliability Industrial safety Probabilities Applied mathematics Engineering mathematics Quality Control, Reliability, Safety and Risk Probability Theory and Stochastic Processes Mathematical and Computational Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	General Concepts and Theoretical Background -- Industrial Multi-state Systems (MSS) and Dynamic Reliability Analysis -- Modern Stochastic Processes Methods for Dynamic MSS Reliability Assessment -- LZ-transform and Extended Universal Generating Function (UGF) Technique.-Applications and Real-world Case Studies -- Short-term Availability and Reliability Analysis for Power Systems -- The Lz-Transform and the Markov Reward Approaches for the Reliability Assessment of Ship's Traction Drives -- Availability Determination for MSS Cold Water Supply System -- Availability Analysis for Aging Air Conditioning Systems -- Sensitivity and Importance Analysis of Aging MSS Water Cooling System for Magnetic Resonance Inspection Plant.
Sommario/riassunto	This book discusses recent developments in dynamic reliability in multi-state systems (MSS), addressing such important issues as

reliability and availability analysis of aging MSS, the impact of initial conditions on MSS reliability and availability, changing importance of components over time in MSS with aging components, and the determination of age-replacement policies. It also describes modifications of traditional methods, such as Markov processes with rewards, as well as a modern mathematical method based on the extended universal generating function technique, the Lz-transform, presenting various successful applications and demonstrating their use in real-world problems. This book provides theoretical insights, information on practical applications, and real-world case studies that are of interest to engineers and industrial managers as well as researchers. It also serves as a textbook or supporting text for graduate and postgraduate courses in industrial, electrical, and mechanical engineering.

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