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Altri autori (Persone)	MisraKrishna B. <1943->
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Performability Engineering: An Essential Concept in the 21st Century -- Engineering Design: A Systems Approach -- A Practitioner's View of Quality, Reliability and Safety -- Product Design Optimization -- Constructing a Product Design for the Environment Process -- Dependability Considerations in the Design of a System -- Designing Engineering Systems for Sustainability -- The Management of Engineering -- Engineering Versus Marketing: An Appraisal in a Global Economic Environment -- The Performance Economy: Business Models for the Functional Service Economy -- Cleaner Production and Industrial Ecology: A Dire Need for 21st Century Manufacturing -- Quality Engineering and Management -- Quality Engineering: Control, Design and Optimization -- Statistical Process Control -- Engineering Process Control: A Review -- Six Sigma — Status and Trends -- Computer Based Robust Engineering -- Integrating a Continual Improvement Process with the Product Development Program -- Reliability Engineering: A Perspective -- Tampered Failure Rate Load-Sharing Systems: Status and Perspectives -- O(kn) Algorithms for Analyzing Repairable and Non-repairable k-out-of-n:G Systems -- Imperfect Coverage Models: Status and Trends -- Reliability of Phased-

mission Systems -- Reliability of Semi-Markov Systems in Discrete Time: Modeling and Estimation -- Binary Decision Diagrams for Reliability Studies -- Field Data Analysis for Repairable Systems: Status and Industry Trends -- Reliability Degradation of Mechanical Components and Systems -- New Models and Measures for Reliability of Multi-state Systems -- A Universal Generating Function in the Analysis of Multi-state Systems -- New Approaches for Reliability Design in Multistate Systems -- New Approaches to System Analysis and Design: A Review -- Optimal Reliability Design of a System -- MIP: A Versatile Tool for Reliability Design of a System -- Reliability Demonstration in Product Validation Testing -- Quantitative Accelerated Life-testing and Data Analysis -- HALT and HASS Overview: The New Quality and Reliability Paradigm -- Modeling Count Data in Risk Analysis and Reliability Engineering -- Fault Tree Analysis -- Common Cause Failure Modeling: Status and Trends -- A Methodology for Promoting Reliable Human-System Interaction -- Risk Analysis and Management: An Introduction -- Accident Analysis of Complex Systems Based on System Control for Safety -- Probabilistic Risk Assessment -- Risk Management -- Risk Governance: An Application of Analytic-deliberative Policy Making -- Maintenance Engineering and Maintainability: An Introduction -- System Maintenance: Trends in Management and Technology -- Maintenance Models and Optimization -- Replacement and Preventive Maintenance Models -- Effective Fault Detection and CBM Based on Oil Data Modeling and DPCA -- Sustainability: Motivation and Pathways for Implementation -- Corporate Sustainability: Some Challenges for Implementing and Teaching Organizational Risk Management in a Performability Context -- Towards Sustainable Operations Management Integrating Sustainability Management into Operations Management Strategies and Practices -- Indicators for Assessing Sustainability Performance -- Sustainable Technology -- Biotechnology: Molecular Design in a Globalizing World -- Nanotechnology: A New Technological Revolution in the 21st Century -- An Overview of Reliability and Failure Mode Analysis of Microelectromechanical Systems (MEMS) -- Amorphous Hydrogenated Carbon Nanofilm -- Applications of Performability Engineering Concepts -- Reliability in the Medical Device Industry -- A Tasks-based Six Sigma Roadmap for Healthcare Services -- Status and Recent Trends in Reliability for Civil Engineering Problems -- Performability Issues in Wireless Communication Networks -- Performability Modeling and Analysis of Grid Computing -- Status and Trends in the Performance Assessment of Fault Tolerant Systems -- Prognostics and Health Monitoring of Electronics -- RAMS Management of Railway Tracks -- Cost-Benefit Optimization Including Maintenance for Structures by a Renewal Model -- Reliability and Price Assessment and the Associated Risk Control for Restructured Power Systems -- Probabilistic Risk Assessment for Nuclear Power Plants -- Software Reliability and Fault-tolerant Systems: An Overview and Perspectives -- Application of the Lognormal Distribution to Software Reliability Engineering -- Early-stage Software Product Quality Prediction Based on Process Measurement Data -- On the Development of Discrete Software Reliability Growth Models -- Epilogue.

Sommario/riassunto

Performability engineering provides us with the framework to consider both dependability and sustainability for the optimal design of products, systems or services. Whereas dependability is an aggregate of one or more of the attributes of survivability (such as quality, reliability, and maintainability etc.) and safety, and the present designs based on dependability and life cycle costs cannot be really called truly optimal since these attributes are strongly influenced by the design,

raw materials, fabrication, techniques and manufacturing processes employed, and their control and usage. Therefore, sustainability, characterized by dematerilization, energy and waste minimization, disposability, reuse and recycling and other the environmental considerations which help in clean production, must be considered along with dependability. Design of 21st Century products, systems and services must conform to performability designs. More so when world resources are on the decline and to keep pace with rising population, the increased volume of production is bound to affect the world's environmental health further. As of now, dependability and cost effectiveness are primarily seen as instruments for conducting the international trade in the free market environment and thereby deciding the economic prosperity of a nation. However, the internalization of the hidden costs of environment preservation will have to be accounted for, sooner or later, in order to be able to produce sustainable products and systems in the long run. These factors cannot be ignored any more and must not be considered in isolation of each other. The Handbook of Performability Engineering considers all aspects of performability engineering, providing a holistic view of the entire life cycle of activities of the product, along with the associated cost of environmental preservation at each stage, while maximizing the performance.