

1. Record Nr.	UNINA9910787707403321
Autore	Koowrocki Krzysztof
Titolo	Reliability of large and complex systems // Krzysztof Koowrocki
Pubbl/distr/stampa	Waltham, Massachusetts : , : Elsevier, , 2014 ©2014
ISBN	0-08-099951-4
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (460 p.)
Collana	Elsevier insights Reliability of large and complex systems
Disciplina	620.001171
Soggetti	Reliability (Engineering) Large scale systems - Evaluation Large scale systems Nanosystems Systems engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Front Cover; Reliability of Large and Complex Systems; Copyright Page; Contents; List of Figures; List of Tables; Notations; Preface; 1 Basic Notions; 2 Two-State Systems; 3 Multi-State Systems; 4 Reliability of Large Two-State Systems; 4.1 Reliability Evaluation of Two-State Series Systems; 4.2 Reliability Evaluation of Two-State Parallel Systems; 4.3 Reliability Evaluation of Two-State 'm out of n' Systems; 4.4 Reliability Evaluation of Two-State Series-Parallel Systems; 4.5 Reliability Evaluation of Two-State Parallel-Series Systems; 4.6 Reliability Evaluation of Other Two-State Systems 5 Reliability of Large Multi-State Systems5.1 Reliability Evaluation of Multi-State Series Systems; 5.2 Reliability Evaluation of Multi-State Parallel Systems; 5.3 Reliability Evaluation of Multi-State 'm out of n' Systems; 5.4 Reliability Evaluation of Multi-State Series-Parallel Systems; 5.5 Reliability Evaluation of Multi-State Parallel-Series Systems; 5.6 Reliability Evaluation of Other Multi-State Systems; 6 Reliability Evaluation of Port and Shipyard Transportation Systems; 6.1 Auxiliary Results; 6.2 Reliability of a Port Grain Transportation System 6.3 Reliability of a Port Oil Transportation System6.4 Reliability of a Port Bulk Transportation System; 6.5 Reliability of a Shipyard Rope

Transportation System; 6.5.1 Application of Corollary 6.2; 6.5.2 Application of Corollary 5.11; 6.5.3 Results Comparison; 7 Reliability of Large Multi-State Exponential Systems; 7.1 Auxiliary Theorems; 7.2 Algorithms for Reliability Evaluation of Multi-state Exponential Systems; 7.3 Algorithms Application to Reliability Evaluation of Exponential Systems; 8 Large Systems Related Problems; 8.1 Domains of Attraction for System Limit Reliability Functions
8.2 Speed of Convergence of System Reliability Function Sequences
8.3 Reliability of Large Series-'m Out of n' Systems; 8.4 Reliability of Large 'm Out of n'-Series Systems; 8.5 Reliability of Large Hierarchical Systems; 8.6 Asymptotic Approach to Systems Reliability Improvement; 9 Complex Systems; 9.1 Introduction; 9.2 Complex System Operation Process Modelling; 9.3 Complex System Reliability Modelling; 9.4 Complex System Reliability and Operation Optimization; 10 Large Complex Systems; 10.1 Asymptotic Approach to Reliability of Large Complex Systems
10.2 Limit Reliability Functions of Large Complex Systems
10.3 Examples of Large Complex Systems Reliability Evaluation; Summary; Description/Abstract; Bibliography

Sommario/riassunto

Reliability of Large and Complex Systems, previously titled Reliability of Large Systems, is an innovative guide to the current state and reliability of large and complex systems. In addition to revised and updated content on the complexity and safety of large and complex mechanisms, this new edition looks at the reliability of nanosystems, a key research topic in nanotechnology science. The author discusses the importance of safety investigation of critical infrastructures that have aged or have been exposed to varying operational conditions. This reference provides an
