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Titolo	Numerical Methods for Reliability and Safety Assessment : Multiscale and Multiphysics Systems / / edited by Seifedine Kadry, Abdelkhalak El Hami
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ISBN	3-319-07167-X
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (807 p.)
Disciplina	518 530.1 620 620.1
Soggetti	Mechanics Mechanics, Applied Physics Computer science - Mathematics Quality control Reliability Industrial safety Solid Mechanics Numerical and Computational Physics, Simulation Computational Mathematics and Numerical Analysis Quality Control, Reliability, Safety and Risk
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 and index.
Nota di contenuto	Mechanical system lifetime -- Likelihood-based approach for uncertainty quantification in multi-physics systems -- Bayesian methodology for uncertainty quantification in complex engineering systems -- The simulus-driven theory of probabilistic dynamics (SDTPD) -- The pavement performance modeling: Deterministic vs. stochastic approaches -- Probabilistic considerations in the damage analysis of ship collisions -- An advanced point estimate method for

uncertainty and sensitivity analysis using Nataf transformation and dimension-reduction integration -- Risk assessment of slope instability related geohazards -- Advances in system reliability analysis under uncertainty -- Reliability of base-isolated liquid storage tanks under horizontal base excitation -- Robust design of accelerated life testing and reliability optimization: Response surface methodology approach -- Reliability measures analysis of a computer system incorporating two types of repair under copula approach -- Reliability of profiled blast wall structures -- Reliability assessment of a multi-redundant repairable mechatronic system -- Infrastructure vulnerability assessment toward extreme meteorological events using satellite data -- Geostatistics and remote sensing for extremes forecasting and disaster risk multiscale analysis -- Time dependent reliability analysis of corrosion affected structures -- Multicut-high dimensional model representation for reliability bounds estimation -- Approximate probability density function solution of multi-degree-of-freedom coupled systems under Poisson impulses -- Evaluate reliability of Morgenstern-Price method in vertical excavations -- Probabilistic approach of safety factor from failure assessment diagram -- Assessing the complex interaction and variations in human performance using non-metrical scaling methods -- Markov modeling for reliability analysis using hypoexponential distribution -- Reliability-based design optimization and its applications to interaction fluid structure problems -- Improved planning in-service inspections of fatigued aircraft structures under parametric uncertainty of underlying lifetime models -- Diffuse response surface model based on advancing Latin hypercube patters for reliability-based design optimization -- The stochastic modeling of the turning decision by left-turning vehicles at a signalized intersection in a university campus -- Decision making behavior of earthquake evacuees: An application of discrete choice models -- Preventive maintenance and replacement scheduling in multi-component systems.

Sommario/riassunto

This book offers unique insight on structural safety and reliability by combining computational methods that address multiphysics problems, involving multiple equations describing different physical phenomena, and multiscale problems, involving discrete sub-problems that together describe important aspects of a system at multiple scales. The book examines a range of engineering domains and problems using dynamic analysis, nonlinear methods, error estimation, finite element analysis, and other computational techniques. This book also: · Introduces novel numerical methods · Illustrates new practical applications · Examines recent engineering applications · Presents up-to-date theoretical results · Offers perspective relevant to a wide audience, including teaching faculty/graduate students, researchers, and practicing engineers.