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Sommario/riassunto	This book reviews and presents several approaches to advanced decision-making models for safety and risk assessment. Each introduced model provides case studies indicating a high level of efficiency, robustness, and applicability, which allow readers to utilize them in their understudy risk-based assessment applications. The book begins by introducing a novel dynamic DEMATEL for improving safety management systems. It then progresses logically, dedicating a chapter to each approach, including advanced FMEA with probabilistic linguistic preference relations, Bayesian Network approach and interval type-2 fuzzy set, advanced TOPSIS with spherical fuzzy set, and advanced BWM with neutrosophic fuzzy set and evidence theory. This book will be of interest to professionals and researchers working in the field of system safety and reliability and postgraduate and undergraduate students studying applications of decision-making tools and expert systems.