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Sommario/riassunto	This textbook investigates in detail the methods for stochastic dynamic response and stability analyses of nonlinear systems (especially ships and ocean engineering systems), elucidating the advantages and disadvantages of each of the methods (the statistical linearization method, the perturbation method, the Monte Carlo Simulation method, the numerical path integration method, the global geometric method and the first passage theory). Studies on stochastic dynamic analysis of nonlinear systems have attracted engineers and scientists from various disciplines, such as aeronautical, civil, mechanical and ocean engineering. Pursuing a systematic approach, this book establishes a fundamental framework for this topic, while emphasizing the importance of accurate and efficient analysis as well as the significant influence of choosing a suitable method in the design and optimization of various nonlinear engineering systems (especially ships and ocean

engineering systems). The textbook is intended for upper undergraduate and graduate students who are interested in advanced dynamic analysis technologies, researchers investigating nonlinear systems under stochastic dynamic excitations, and civil/mechanical/structural/ocean engineers working on designing and optimization of real-world nonlinear engineering systems. The basis of English translation of this book from its Chinese original manuscript was done with the help of artificial intelligence. A subsequent human revision of the content was done by the author.