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"II. Response of a Linear MDOF System""III. Response of a Linear Structure to Stationary Random Excitations""IV. Summary""Chapter 6 Nonlinear Single-Degree-of-Freedom and Multiple-Degree-of-Freedom Systems""I. Introduction""II. Nonlinear Behavior of an SDOF Oscillator""III. Nonlinear Coefficients of a Structure""IV. Summary""Chapter 7 Statistical Linearization Method""I. Statistical Linearization Method for an MDOF System""II. Nonlinear Response of an SDOF System to Random Gaussian Force""III. Nonlinear Random Response of Two-DOF System to Random Gaussian Force""IV. Nonlinear Random Response of an Elastic System""V. Computational Procedure""VI. Calculation of Stress Response""VII. Summary""Chapter 8 Nondeterministic Structures: Basic Concepts""I. Introduction""II. Failure Surface: Basic Case""III. Reliability Index""IV. Summary""Chapter 9 Calculation of the Probability of Failure""I. Introduction""II. Lagrange Multiplier Method""III. Demonstration of the Iterative Process""IV. Numerical Programs for Probabilistic Structural Analysis""V. Summary""Chapter 10 Taylor Series Expansion of the Failure Surface""I. Introduction""II. Taylor Series Expansion""III. Selection of the Evaluation Point""IV. Detailed Examples of the Taylor Series Expansion Method""V. Summary""Chapter 11 Direct Calculation of the Probability of Failure Using an Existing Finite Element Program""I. Introduction""II. MJPDF Method""III. Numerical Examples""IV. Summary""Chapter 12 Probability of Failure of Dynamic Systems""I. Introduction""II. Statistical Behavior of a Stationary Gaussian Process"

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Sommario/riassunto

This text synthesizes information for analyzing random vibrations and structures into one coherent body of knowledge. It takes a practical yet progressive look at two major fields related to random analysis: linear and geometrically nonlinear structures, and the behaviour of random structures under random loads.

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