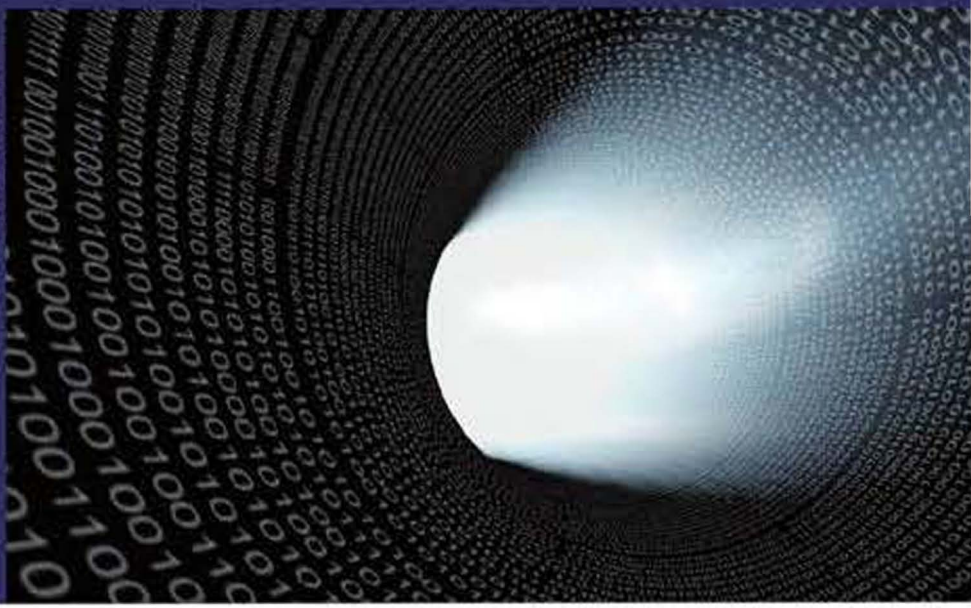
RELIABILITY OF SYSTEMS. Part 2.



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Part 2.
Dynamics of Failures

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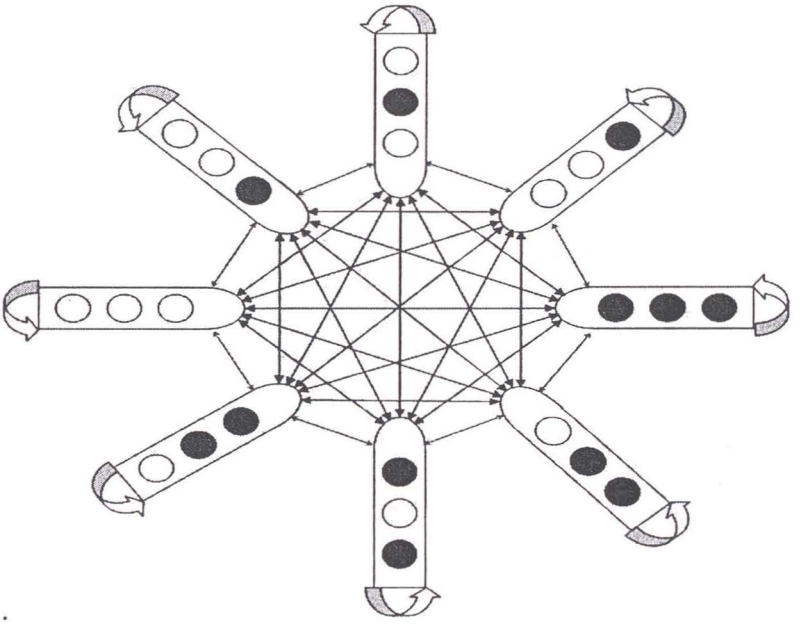

Part 2

DYNAMICS OF FAILURES

Markov discrete chain
Process of failures – recovery
Process stability
Analytical solutions
Probability bounds

2016

The "Reliability of Systems. Dynamics of failures" covers the basic provisions of systems reliability assessment in dynamic run-time. A symmetrical structure discrete Markov chains are being considered for modeling random processes, such as failures and recoveries in technical and biological systems. The criterion of stability of random Markov process was established. An algorithm for determining the marginal probabilities of system states was developed. A method for evaluating the economic efficiency of the simulated discrete Markov chains was proposed. The matrix of transition prices was introduced, the appropriate mathematical conversions price expectations and the expectation of price transition system throughout possible states. The method is illustrated on the biological system and the Smart house system. This book is recommended for engineers, teachers and students of high education institutions, who in their practice pose and solve problems of reliability of systems. The book contains a number of new materials developed be the authors in the last years that have not been published before in full.

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