Rubino, Gerard and Bruno Sericola. *Markov Chains and Dependability Theory*. New York, NY: Cambridge University Press, 2014, 278 pp. $99.00 (Hardbound).

Dependability metrics are omnipresent in every engineering field, from simple ones to more complex measures combining performance and dependability aspects of systems. This book presents the mathematical basis of the analysis of these metrics in the most used framework, Markov models, describing both basic results and specialized techniques.

The authors first present both discrete and continuous-time Markov chains before focusing on dependability measures, which necessitate the study of Markov chains on a subset of states representing different user satisfaction levels for the modeled system. Topics covered include Markovian state lumping, analysis of sojourns on subsets of states of Markov chains, analysis of most dependability metrics, fundamentals of performability analysis, and bounding and simulation techniques designed to evaluate dependability measures. The book is of interest to graduate students and researchers in all areas of engineering where the concepts of life-time, repair duration, availability, reliability, and risk are important.

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