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Sommario/riassunto

This book offers a comprehensive examination of the Cramér–Lundberg model, which is the most extensively researched model in ruin theory. It covers the fundamental dynamics of an insurance company's surplus level in great detail, presenting a thorough analysis of the ruin probability and related measures for both the standard model and its variants. Providing a systematic and self-contained approach to evaluate the crucial quantities found in the Cramér–Lundberg model, the book makes use of connections with related queueing models when appropriate, and its emphasis on clean transform-based techniques sets it apart from other works. In addition to consolidating a wealth of existing results, the book also derives several new outcomes using the same methodology. This material is complemented by a thoughtfully chosen collection of exercises. The book's primary target audience is master's and starting PhD students in applied mathematics, operations research, and actuarial science, although it also serves as a useful methodological resource for more advanced researchers. The material is self-contained, requiring only a basic grounding in probability theory and some knowledge of transform techniques.