Willmot, Gordon E.; **Woo, Jae-Kyung**
Surplus analysis of Sparre Andersen insurance risk processes. (English) ｜Zbl 1391.91006｜
Springer Actuarial. Cham: Springer (ISBN 978-3-319-71361-8/hbk; 978-3-319-71362-5/ebook). viii, 225 p. (2017).

The monograph is devoted to the surplus analysis of the Sparre-Andersen process using the renewal process as the model for claim counts. Various risk quantities of interest associated with the event of ruin are studied, including the time of ruin and the deficit of ruin.

The book contains 8 chapters, references and index (total 225 pages). Chapter 1, Introduction, is devoted to an overview of the book. Technical preparations are presented in Chapter 2. Chapter 3 and 4 deal with Gerber-Shiu analysis in the classical Poisson risk model and in the dependent Sparre Andersen model, respectively. Models involving Erlang components are described in Chapter 5. Chapter 6 investigates the time of ruin in the classical Poisson risk model. Delayed, stationary and discrete renewal risk models are considered in Chapter 7. Some other topics, such as, but not limited to, additional variables in the penalty functions, ordering properties of ruin-related quantities and bounds on solutions to renewal equations, are considered in Chapter 8. The References section contains more than 120 useful sources in this area of risk theory.

This book is intended for researchers interested in ruin/risk theory, and will also be useful for graduate students specialized in classical and modern risk theory.

Reviewer: Anatoliy Swishchuk (Calgary)

MSC:

91–02	Research exposition (monographs, survey articles) pertaining to game theory, economics, and finance
91B30	Risk theory, insurance (MSC2010)
60K10	Applications of renewal theory (reliability, demand theory, etc.)
60K05	Renewal theory

Cited in **4** Documents

Keywords:

Sparre-Andersen risk process; insurance; surplus analysis; renewal equations; Poisson risk model; Gerber-Shiu analysis; ruin probabilities; renewal risk model

Full Text: DOI