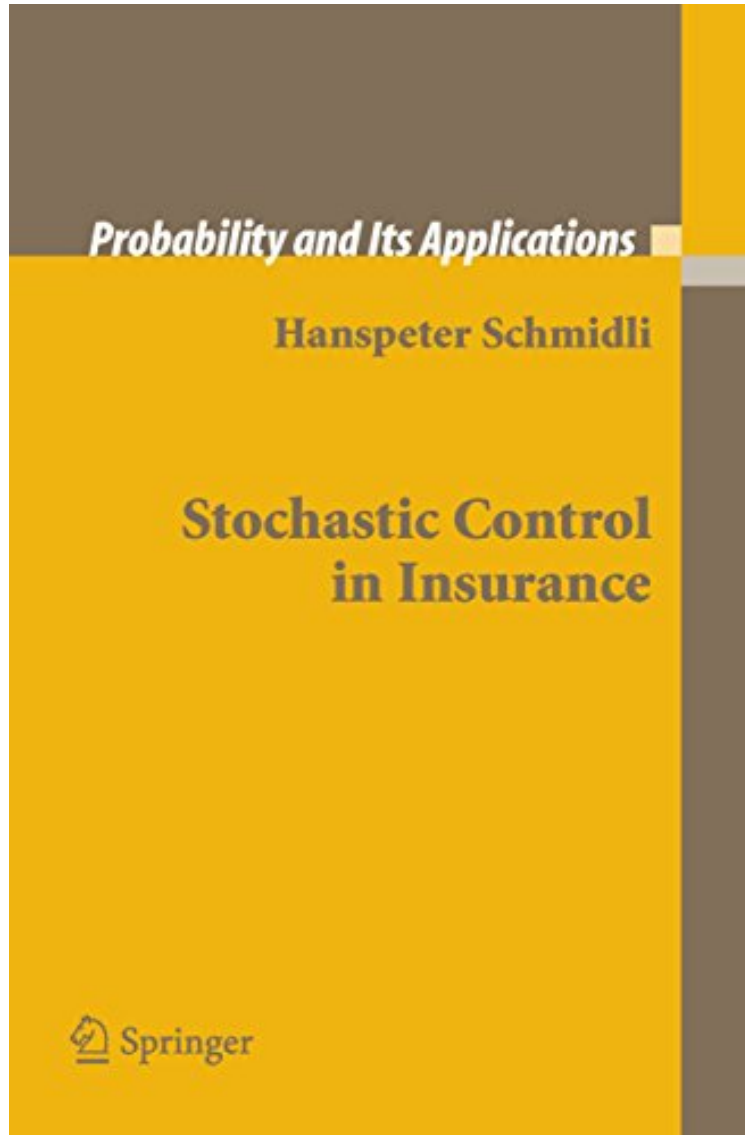


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Stochastic Control in Insurance (Probability and Its Applications)

Hanspeter Schmidli

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Hanspeter Schmidli : Stochastic Control in Insurance (Probability and Its Applications) before purchasing it in order to gauge whether or not it would be worth my time, and all praised Stochastic Control in Insurance (Probability and Its Applications):

Yet again, here is a Springer volume that offers readers something completely new. Until now, solved examples of the application of stochastic control to actuarial problems could only be found in journals. Not any more: this is the first

book to systematically present these methods in one volume. The author starts with a short introduction to stochastic control techniques, then applies the principles to several problems. These examples show how verification theorems and existence theorems may be proved, and that the non-diffusion case is simpler than the diffusion case. Schmidlirquo;s brilliant text also includes a number of appendices, a vital resource for those in both academic and professional settings.

From the reviews: "This book provides a state of the art treatment of dynamic stochastic control problems arising in insurance, like investment, dividend payout and reinsurance problems. hellip; The book comprises four chapters and a comprehensive appendix about stochastic processes, risk theory, life insurance and the Black-Scholes model. hellip; is certainly a valuable reference for graduate students and researchers in actuarial sciences who are interested in stochastic control methods. It discusses in a critical way the HJB approach for these problems and shows its scope and limitations." (Nicole Baumlerle, *Mathematical s*, Issue 2008 k)From the Back CoverStochastic control is one of the methods being used to find optimal decision-making strategies in fields such as operations research and mathematical finance. In recent years, stochastic control techniques have been applied to non-life insurance problems, and in life insurance the theory has been further developed. This book provides a systematic treatment of optimal control methods applied to problems from insurance and investment, complete with detailed proofs. The theory is discussed and illustrated by way of examples, using concrete simple optimisation problems that occur in the actuarial sciences. The problems come from non-life insurance as well as life and pension insurance and also cover the famous Merton problem from mathematical finance. Wherever possible, the proofs are probabilistic but in some cases well-established analytical methods are used. The book is directed towards graduate students and researchers in actuarial science and mathematical finance who want to learn stochastic control within an insurance setting, but it will also appeal to applied probabilists interested in the insurance applications and to practitioners who want to learn more about how the method works. Readers should be familiar with basic probability theory and have a working knowledge of Brownian motion, Markov processes, martingales and stochastic calculus. Some knowledge of measure theory will also be useful for following the proofs.