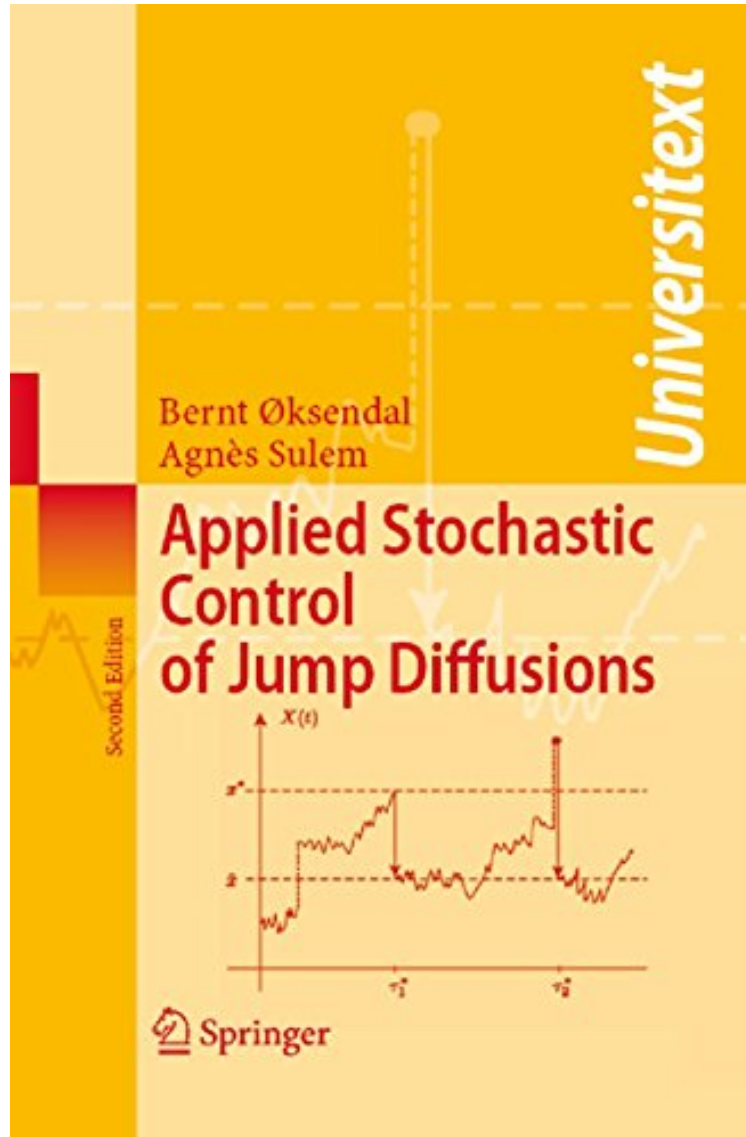


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## Applied Stochastic Control of Jump Diffusions (Universitext)

Bernt Øksendal; Agnès Sulem  
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**Bernt Øksendal; Agnès Sulem : Applied Stochastic Control of Jump Diffusions (Universitext)** before purchasing it in order to gauge whether or not it would be worth my time, and all praised Applied Stochastic Control of Jump Diffusions (Universitext):

5 of 5 people found the following review helpful. A really good book! By T. Leirvik I found this book interesting and to the point both mathematically and in explaining some of the financial problems which can be solved using the theory. It's easy to read and understand, even though some of the proofs can be a little hard in the first reading. The exercises, and the solutions (yes, there is a chapter devoted to solutions of most of the exercises) make the understanding of the

theory complete. I really liked this book!

Here is a rigorous introduction to the most important and useful solution methods of various types of stochastic control problems for jump diffusions and its applications. Discussion includes the dynamic programming method and the maximum principle method, and their relationship. The text emphasises real-world applications, primarily in finance. Results are illustrated by examples, with end-of-chapter exercises including complete solutions. The 2nd edition adds a chapter on optimal control of stochastic partial differential equations driven by Lévy processes, and a new section on optimal stopping with delayed information. Basic knowledge of stochastic analysis, measure theory and partial differential equations is assumed.

From the reviews: "The main purpose of this excellent monograph is to give a rigorous non-technical introduction to the most important and useful solution methods of various types of optimal stochastic control problems for jump diffusions and their applications. . . . All the main results are illustrated by examples and exercises . . . . This really helps the reader to understand the theory and to see how it can be applied. . . . This book is a very useful text for students, researchers, and practitioners working in stochastic analysis . . . ." (Pavel Gapeev, Zentralblatt MATH, Vol. 1074, 2005) "The focus is on the applied aspect of the theory of control diffusion processes with jumps, particularly in finance and economy. . . . A relatively large number of examples and exercises (with solutions) is provided, mainly typical models in finance, but also examples in biology, physics, or engineering. . . . Summing up, this book is a very good addition to the stochastic control literature . . . ." (Jose-Luis Menaldi, SIAM Review, Vol. 47 (4), 2005) "In recent time optimal control in finance is connected with modelling of stock prices by Lévy processes and considering of different transaction costs. In the last ten years the authors and their collaborators obtained a lot of results on this field. The publication of this work in the present book seems to be a good way to attain a big audience. . . . It is useful for students and practitioners in stochastic analysis." (Hans-Joachim Girlich, OR News, Issue 25, November, 2005) From the Back Cover The main purpose of the book is to give a rigorous, yet mostly nontechnical, introduction to the most important and useful solution methods of various types of stochastic control problems for jump diffusions (i.e. solutions of stochastic differential equations driven by Lévy processes) and its applications. The types of control problems covered include classical stochastic control, optimal stopping, impulse control and singular control. Both the dynamic programming method and the maximum principle method are discussed, as well as the relation between them. Corresponding verification theorems involving the Hamilton-Jacobi Bellman equation and/or (quasi-)variational inequalities are formulated. There are also chapters on the viscosity solution formulation and numerical methods. The text emphasises applications, mostly to finance. All the main results are illustrated by examples and exercises at the end of each chapter with complete solutions. This will help the reader understand the theory and see how to apply it. The book assumes some basic knowledge of stochastic analysis, measure theory and partial differential equations. About the Author Bernt Oksendal is a proven Springer author. His book, Stochastic Differential Equations: An Introduction with Applications, has sold over 10,000 copies and has been translated into Japanese and Chinese.