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Financial modelling with jump processes. (English)

Chapman & Hall/CRC Financial Mathematics Series. Boca Raton, FL: Chapman and Hall/CRC. xvi, 535 p. \$ 79.95 (2004). [ISBN 1-58488-413-4/hbk]

The book is devoted to the theoretical, numerical and empirical research on the use of jump processes in financial modelling. After a short introduction to financial modelling beyond Brownian motion, in the first part (chapters 2-5) the authors present a concise introduction to the mathematical theory of Lévy processes and related topics. The simulation and estimation of models with jumps are studied in chapters 6 and 7. The third and longest part (chapters 8-13) deals with the option pricing models based on stochastic calculus for jump processes. The models with jumps which are not in the exponential Lévy class are examined in the last part of the book. Throughout it, the authors offer significant contributions to the levels of mathematical details used to treat topics such as these.

This book provides a very well organized and clearly presented content, being based on pertinent references which include important results that belong to the authors.

The volume will be useful for the students, researchers in applied mathematics and quantitative finance as well as those interested in the study and the implications of discontinuous stochastic models and not only.

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Keywords : stochastic process; multidimensional and stochastic volatility models with jumps

Classification :

- *91B28 Finance etc.
- 91B70 Stochastic models
- 91B82 Statistical methods in economics
- 91B24 Price theory and market structure
- 91B30 Risk theory etc.

Cited in ...