

Jacod, Jean; Shiryaev, Albert N.

Limit theorems for stochastic processes. 2nd ed. (English) Zbl 1018.60002
Grundlehren der Mathematischen Wissenschaften. 288. Berlin: Springer. xx, 661 p. (2003).

This is the second edition of the fundamental monograph [for the first edition (1987) see [Zbl 0635.60021](#)]. This new edition has grown by about 50 pages and the new material concerns three main topics: 1) Doleans-Dade stochastic exponentials and logarithms, multiplicative decomposition of semimartingales, generalized integration theory for multi-dimensional processes and Esscher's change of measure; 2) the predictable uniform tightness condition for sequences of semimartingales and its application to approximations of stochastic differential equations; 3) progressive conditional continuous processes of independent increments and stable convergence of discretized processes. These extensions make the book even more valuable and comprehensive for people working in mathematical finance, numerics of stochastic processes and, of course, statistics of stochastic processes. The remaining parts have been left unchanged except for the elimination of small mistakes such that the references for theorems are compatible with those regarding the first edition.

Reviewer: [Markus Reiß \(Berlin\)](#)

MSC:

[60-02](#) Research exposition (monographs, survey articles) pertaining to probability theory
[60Fxx](#) Limit theorems in probability theory
[60Jxx](#) Markov processes
[60Gxx](#) Stochastic processes

Cited in **10** Reviews
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Keywords:

[semimartingale](#); [characteristics](#); [martingale problem](#); [Girsanov's theorem](#); [Hellinger processes](#); [Skorokhod topology](#); [stable convergence](#)