

Billingsley, Patrick

Probability and measure. 3rd ed. (English) Zbl 0822.60002
Chichester: John Wiley & Sons Ltd. xii, 593 p. (1995).

[For the first edition (1979) see [Zbl 0411.60001](#).]

The author said in the preface to the second edition (1986; [Zbl 0649.60001](#)): The book is done – no further editions. Yet there is a third one! In this edition, there are two main changes. Sections 19 and 24 in the second edition were dealing, respectively, with Hausdorff measures and queueing theory. These topics have been replaced by an account of L^p spaces (completeness, Riesz representation theorem, weak sequential compactness of the closed unit ball in L^p , $1 < p \leq \infty$, with applications to decision theory) and an introduction to ergodic theory with applications to continued fractions and Diophantine approximation. Subsections on de Finetti's theorem and the reflection principle have been added, and there is now a much more general central limit theorem for martingales. The number of problems went down from about 700 to approximately 600. However, in the new edition there is e.g. a subsection on sequence spaces containing material of several problems in the second edition. The slightly expanded appendix now also contains a few facts on multivariable calculus (in particular the inverse-function theorem) and continued fractions. Will there really be no fourth edition of this excellent book (as the author announces in the preface)?

Reviewer: [K.Schürger \(Bonn\)](#)

MSC:

- [60-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to probability theory
- [28-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to measure and integration

Cited in **7** Reviews
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Keywords:

[Riesz representation theorem](#); [weak sequential compactness](#); [ergodic theory](#); [continued fractions and Diophantine approximation](#)