

Preface

These lecture notes are the second version of the book “*Théorie asymptotique des processus aléatoires faiblement dépendants*”, written in French. In the process of translation, some misprints and inaccuracies have been removed, some proofs rewritten in more detail, some recent references have been added and three new sections incorporated. However, the numeration of the initial sections remains unchanged. Below I give comments on the three new sections.

Section 1.7 gives another covariance inequality for strongly mixing sequences. This covariance inequality is an improvement of Inequality (7) of Exercise 8, obtained by the author at the end of 1991. Section 4.4 deals with the central limit theorem for triangular arrays. This section is based on a paper of the author on the Lindeberg method. In Sect. 5.6 a meaningful coupling lemma of Peligrad for unbounded random variables is stated and proved.

The mathematics of the initial version was completed in January 1999. Since that time, there has been a huge amount of new results. In particular, it is now clear that the notions of weak dependence used in this book are too restrictive for some applications, for instance in the case of Markov chains associated to some dynamical systems. Consequently some new notions of weak dependence have been introduced. We refer to Dedecker et al. (2007) for an introduction to these new notions of dependence and their associated coefficients of dependence, as well as some applications of these new techniques. We will not treat this much broader spectrum of dependence in this second edition. Finally, it is a pleasure to thank Marina Reizakis and all the staff at Springer who contributed towards the production of this book.

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