

Preface

This monograph is concerned with the theory and applications of the Borel–Cantelli Lemma, hereafter referred to as BCL, although the applications of BCL to the strong laws of large numbers and the laws of the iterated logarithms will not be mentioned here. BCL is indispensable for deriving results on, the almost sure behavior of random variables. Hence almost all textbooks on probability theory contain a discussion on BCL. However, I have tried to include here as an extensive a treatment of BCL as possible. I have attempted to make this monograph self-contained by introducing some standard facts on probability theory in [Chap. 1](#). A special feature of this treatise is a very exhaustive list of research papers and books on BCL; however, if there is any important omission in this regard, it is due to the lack of my knowledge and I sincerely apologize for it.

Attempts have been made to make the discussion lucid, simple, and thorough; the proofs are given in great detail and are completely rigorous. Any advanced undergraduate student learning probability theory will be able to understand a large part of this monograph.

I am grateful to my colleagues Sreela Gangopadhyay and Gour Mohan Saha for their great help. Thanks are also due to Prasanta Kumar Sen for doing an excellent typing.

I learnt the introductory probability from Anil Kumar Bhattacharyya, my teacher at Presidency College, Kolkata, India. Then I learnt the measure theoretic and advanced probability from Ashok Maitra of the Indian Statistical Institute, Kolkata, India. I am indebted to them for my current state of understanding, probability theory. I gratefully dedicate this monograph to the loving memory of these two great teachers and respectable personalities.

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