

Contents

Foreword		ix
Preface		xi
Notation		xv
Chapter 1. Strong Approximations of Partial Sums of Independent Identically Distributed Random Variables		1
1.0. Introduction and Some Notations		1
1.1. The Komlós–Major–Tusnády Theorems		1
1.2. Further Results and Remarks		15
Chapter 2. Renewal and Related Processes		23
2.0. Introduction and Notations		23
2.1. Joint Approximations of Partial Sums and their Renewal Processes		24
2.2. Best Approximations of Renewal Processes		45
2.3. Randomly Stopped Processes		72
2.4. Applications of Randomly Stopped Processes		88
2.5. Further Results and Remarks		107
Chapter 3. Uniform Empirical and Quantile Processes and their Approximations		111
3.0. Notations and Some Observations		111
3.1. Approximations of the Uniform Empirical Process		113
3.2. Approximations of the Uniform Quantile Process		152
3.3. Distance Between the Uniform Empirical and Quantile Processes		163
3.4. Further Results and Remarks		173
Chapter 4. Weighted Approximations of Uniform Empirical and Quantile Processes		177
4.0. Introduction		177
4.1. Weighted Wiener Processes and Brownian Bridges		177

4.2. Weighted Approximations of Uniform Quantile Processes	195
4.3. Weighted Approximations of Uniform Empirical Processes	213
4.4. Joint Weighted Approximations of Uniform Empirical and Quantile Processes	239
4.5. Further Results and Remarks	249
Chapter 5. Asymptotic Distributions of Functionals of Weighted Uniform Empirical and Quantile Processes	253
5.0. Introduction	253
5.1. Suprema of Weighted Uniform Empirical Processes	254
5.2. Suprema of Weighted Uniform Quantile Processes	298
5.3. L_p -functionals of Weighted Uniform Empirical Processes	314
5.4. L_p -functionals of Weighted Uniform Quantile Processes	350
5.5. Further Results and Remarks	363
Chapter 6. General Quantile Processes and their Approximations	365
6.0. Introduction and Notations	365
6.1. Deviations Between the General and Uniform Quantile Processes	369
6.2. Weighted Deviations Between the General and Uniform Quantile Processes	381
6.3. Suprema of Weighted Quantile Processes	386
6.4. L_p -functionals of Weighted Quantile Processes	401
6.5. Distance Between Empirical and Quantile Processes	409
6.6. Further Results and Remarks	412
Appendix	415
References	423
Author Index	437
Subject Index	439