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Re-centering Bounds, with Applications to Rosenthal-type Concentration of Measure Inequalities; 1. Introduction
2. Summary and discussion
3. Application: Rosenthal-type concentration inequalities for separately Lipschitz functions on product spaces; 4. Proofs; Acknowledgment; References; Strong Log-concavity is Preserved by Convolution; 1. Log-concavity and ultra-log-concavity for discrete distributions; 2. Log-concavity and strong-log-concavity for continuous distributions on \mathbb{R} ; 3. Appendix: strong convexity and strong log-concavity; Acknowledgment; References; On Some Gaussian Concentration Inequality for Non-Lipschitz Functions; 1. Introduction; 2. The result; 3. Application to U-statistics
References
Part II Limit Theorems; Rates of Convergence in the Strong Invariance Principle for Non-adapted Sequences. Application to Ergodic Automorphisms of the Torus; 1. Introduction and notations; 2. ASIP with rates for ergodic automorphisms of the torus; 3. Probabilistic results; 4. Proof of Theorem 2.1; 4.1. Preparatory material; 4.2. End of the proof of Theorem 2.1; 5. Appendix; References; On the Rate of Convergence to the Semi-circular Law; 1. Introduction; 2. Bounds for the Kolmogorov distance between distribution functions via Stieltjes transforms; 3. Large deviations I
4.3. Empirical process CLT's over C for other independent increment processes and martingales

Sommario/riassunto

This is a collection of papers by participants at the High Dimensional Probability VI Meeting held from October 9-14, 2011 at the Banff International Research Station in Banff, Alberta, Canada. High Dimensional Probability (HDP) is an area of mathematics that includes the study of probability distributions and limit theorems in infinite dimensional spaces such as Hilbert spaces and Banach spaces. The most remarkable feature of this area is that it has resulted in the creation of powerful new tools and perspectives, whose range of application has led to interactions with other areas of mathematics, statistics, and computer science. These include random matrix theory, nonparametric statistics, empirical process theory, statistical learning theory, concentration of measure phenomena, strong and weak approximations, distribution function estimation in high dimensions, combinatorial optimization, and random graph theory. The papers in this volume show that HDP theory continues to develop new tools, methods, techniques and perspectives to analyze the random phenomena. Both researchers and advanced students will find this book of great use for learning about new avenues of research.
