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BOOK ANNOUNCEMENT

PEÑA, V. H., LAI, T. L. AND SHAO, Q.-M. (2009). Self-Normalized Processes

is a volume in the series

Probability and Its Applications

published by Springer in collaboration with the Applied Probability Trust.

Self-normalized processes are of common occurrence in probabilistic and statistical studies. A prototypical example is Student's *t*-statistic introduced in 1908 by Gosset, whose portrait is on the front cover. Due to the highly non-linear nature of these processes, the theory experienced a long period of slow development. In recent years there have been a number of important advances in the theory and applications of self-normalized processes. Some of these developments are closely linked to the study of central limit theorems, which imply that self-normalized processes are approximate pivots for statistical inference.

The present volume covers recent developments in the area, including selfnormalized large and moderate deviations, and laws of the iterated logarithms for self-normalized martingales. This is the first book that systematically treats the theory and applications of self-normalization.

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- 1. Introduction
- 2. Classical Limit Theorems, Inequalities and Other Tools
- 3. Self-Normalized Large Deviations
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- 7. Cramér-Type Moderate Deviations for Self-Normalized Sums
- 8. Self-Normalized Empirical Processes and *U* Statistics
- 9. Martingale Inequalities and Related Tools
- 10. A General Framework for Self-Normalization

- 11. Pseudo-Maximization via Method of Mixtures
- 12. Moment and Exponential Inequalities for Self-Normalized Processes
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- Sequential Analysis and Boundary Crossing Probabilities for Self-Normalized Statistics

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