The Chinese University of Hong Kong
Department of Statistics

Seminar

Error Bounds in Local Limit Theorems Using Stein's Method

By

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Abstract

We provide a general result for bounding the difference between point probabilities of integer supported distributions and the translated Poisson distribution, a convenient alternative to the discretized normal. We illustrate our theorem in the context of the Hoeffding combinatorial central limit theorem with integer valued summands, of the number of isolated vertices in an Erdős-Rényi random graph, and of the Curie-Weiss model of magnetism, where we provide optimal or near optimal rates of convergence in the local limit metric. In the Hoeffding example, even the discrete normal approximation bounds seem to be new. The general result follows from Stein's method, and requires a new bound on the Stein solution for the Poisson distribution, which is of general interest. Joint work with A.D. Barbour and Adrian Roellin.

Date: December 13, 2018 (Thursday)
Time: 2:30 p.m. - 3:30 p.m.
Venue: Liang Y C Hall Room LPN LT
The Chinese University of Hong Kong

ALL INTERESTED ARE WELCOME !!