COLLOQUIUM
Department of Statistics and Probability
Michigan State University

Alexander Sakhanenko
Sobolev Institute of Mathematics, Novosibirsk, Russia

Generalizations of KMT Approximation
for Sequences of Partial Sums

Tuesday, January 24, 2012
A405 Wells Hall
10:20 a.m. - 11:10 a.m.
Refreshments: 10:00 a.m.

Abstract

The famous approximation theorems due to Komlos, Major and Tusmady are powerful tools in many investigations where one wants to find asymptotical distributions of complicated functionals dependent on a path of some random walk. In the talk all these results will be reviewed in a compact form to show their advantages and disadvantages. For example, KMT approximations hold only for i.i.d. random variables with implicit dependence on their common distribution. After that a new estimate due to the author will be presented. It alone implies all KMT approximations and depends in an explicit way on parameters of the common distribution. Moreover, several more general results for sequences of sums of non-identically distributed independent random variables will be presented. They also depend explicitly on parameters of distributions. The latter allows us to apply these estimates in the case of double arrays of random variables, which is essential in many modern statistical problems. Finally, note that all presented estimates of the author are unimprovable up to some absolute constants.

To request an interpreter or other accomodations for people with disabilities, please call the Department of Statistics and Probability at 517-355-9589.