Pointwise approximations for sums of non-identically distributed Bernoulli trials

Adilson Simonis
IME-USP

Abstract

Binomial and Poisson approximations to the law of the sum of independent non-identically distributed Bernoulli variables are reexamined. In each case, new bounds on both "pointwise distances" and total variation distance are obtained, improving the well-known Le Cam's type inequalities. The rather simple technique introduced also yields a comparison between Binomial and Poisson models and a geometric approximation to the distribution of the waiting time for the first success. In addition, some examples of application of these results are presented and questions for futher investigations are posed. This a joint work with M. Abadi and L. G. Esteves.

e-mail: asimonis@ime.usp.br