Noncentral Pólya-Aeppli Distribution

Meglena D. Lazarova, Leda D. Minkova
Faculty of Mathematics and Informatics
Sofia University "St. Kl. Ohridski"
meglena.laz@fmi.uni-sofia.bg
leda@fmi.uni-sofia.bg

In this paper we introduce a counting random variable which is a sum of Poisson distributed random variable and another one with Pólya-Aeppli distribution. The resulting distribution is called Noncentral Pólya-Aeppli distribution. The probability mass function, recursion formulas and some properties are derived. As application we introduce a Noncentral Pólya-Aeppli process (NPAP). Then we extend the distribution to the bivariate case.