

This bachelor thesis deals with goodness-of-fit tests for Poisson distribution that are based on so-called zero index. In the first part, Poisson zero index is defined and some of its basic properties are discussed. Further, asymptotic distribution of zero indexes is derived and it is used to construct asymptotic goodness-of-fit tests. Particular examples of zero indexes and related tests are included. In the following part, other types of goodness-of-fit tests for Poisson distribution are briefly described, in particular χ^2 -tests and tests based on index of dispersion. All mentioned methods are then compared in a simulation study.