



An objective Bayesian approach to tolerance intervals for the Poisson distribution

Lizanne Raubenheimer

Rhodes University, Grahamstown, South Africa - L.Raubenheimer@ru.ac.za

In this paper we will have a look at Bayesian tolerance intervals for the Poisson distribution. Tolerance intervals could be of interest in quality control. A tolerance interval gives information about a certain proportion or more of the population, with a given confidence level. This proportion is also referred to as the content of a tolerance interval. Whereas a confidence interval gives information about an unknown parameter. The goal of a tolerance interval is to contain at least a specified proportion of the population with a specified degree of confidence. An objective Bayesian approach will be used. The coverage rates obtained for one-sided and two-sided intervals were relatively good, where the coverage rates were most of the time at or above 0.95.

Keywords: Noninformative priors; posterior; predictive density.