

Complete Neyman - Bayes Estimation Procedures for the Mean of a Normal distribution

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Abstract

Complete Neyman estimation procedures, introduced by E. von Collani and M. Dumitrescu ([2]) represent a new approach of the parameter estimation issue, under the realistic assumption that the parameter space is not maximal. These procedures are based on the $(1 - \alpha)$ — optimal Measurement and Prediction Set (MPS), constructed through a computer intensive method. An optimal confidence region and the associated point estimator are constructed. The Neyman-Bayes approach, using a prior distribution for the parameter, is an immediate extension of the upper procedures. This paper implements both the Neyman and the Neyman-Bayes estimation procedures for the mean of a normal distribution, with known variance. Comparisons of these two procedures with the traditional one are presented for a numerical example.

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