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METHODOLOGY FOR THE INVARIANT ESTIMATION OF A CONTINUOUS DISTRIBUTION FUNCTION

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Abstract. Consider both the classical and some more general invariant decision problems of estimating a continuous distribution function, with the loss function $L(F, a) = \int (F(t) - a(t))^2 h(F(t)) dF(t)$ and a sample of size n from F. It is proved that any nonrandomized estimator can be approximated in Lebesgue measure by the more general invariant estimators. Some methods for investigating the finite sample problem are discussed. As an application, a proof that the best invariant estimator is minimax when the sample size is 1 is given.

Key words and phrases: Admissibility, admissibility within U_1, invariant estimator, minimaxity.