

Minimax Invariant Estimator of a Continuous Distribution Function under LINEX Loss

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Abstract: Consider the problem of estimation of a continuous distribution function with the LINEX loss function. The best invariant estimator is obtained, and proved to be minimax for any sample size $n \geq 1$.

References

- [1] Aggarwa, O.P. (1995). Some Minimax Invariant Procedures for Estimating a Cumulative Distribution Function, *Ann. Math. Statist*, 26, 450-462.
- [2] Yu, Q. (1992). Minimax Invariant Estimator of a Continuous Distribution Function, *Ann. Inst. Statist. Math.*, 44, 729-735.
- [3] Yu, Q. and Phadia, E.G. (1992). Minimavity of the Best Invariant Estimator of a Distribution Function under the Kolmogorov-Smirnov Loss, *Ann. Statist*, 20, 2192-2195.
- [4] Feynman, R.P. and Feynman, Mr. (1987). Engineering and Science, *California Institute of Technology*, 6-62.
- [5] Zellner, A. (1986). Bayes Estimation and Prediction Using Asymmetric Loss Functions, *J. Amer. Statist. Assoc*, 81, 446-451.
- [6] Varian, H.R. (1975). A Bayesian Approach to Real Estate Assessment, In: *Studies in Bayesian Econometrics and Statistics in Honour of L.J. Savage*, (Fienberg, S.E. and Zellner, A. Eds.) North-Holland, Amsterdam, 195-208.
- [7] Wana, A.T.K., Zoub, G. and Leec, A.H. (2000). Minimax and Γ -minimax Estimation for the Poisson Distribution under LINEX Loss when the Parameter Space is Restricted, *Statistics & Probability Letters*, 50, 23-32.
- [8] Parsian, A. (1990). On the Admissibility of an Estimator of a Normal Mean Vector under a LINEX Loss Function, *Ann. Inst. Statist. Math.*, 42, 657-669.
- [9] Takagi, Y. (1994). Local Asymptotic Minimax Risk Bounds for Asymmetric Loss Functions, *Ann. Statist*, 22, 39-48.
- [10] Cain, M. and Janssen, C. (1995). Real Estate Price Prediction under Asymmetric Loss, *Ann. Inst. Statist. Math.*, 47, 401-414.
- [11] Ohtani, K. (1995). Generalized Ridge Regression Estimators under the LINEX Loss Function, *Statist. Papers*, 36, 99-110.
- [12] Zou, G.H. (1997). Admissible Estimation for Finite Population under the LINEX Loss Function, *J. Statist. Plann. Inference*, 61, 373-384.
- [13] Wan, A.T.K. (1999). A Note on Almost Unbiased Generalized Ridge Regression Estimator under Asymmetric Loss, *J. Statist. Comput. Simulation*, 62, 411-421.
- [14] Wan, A.T.K and Kurumai, H. (1999). An Iterative Feasible Minimum Mean Squared Error Estimator of the Disturbance Variance in Linear Regression under Asymmetric Loss, *Statist. Probab. Lett.*, 45, 253-259.

- [15] Yu, Q. and Chow, M.S. (1991). Minimacity of the Empirical Distribution Function in Invariant Estimation, *Ann. Statist.*, 19, 935-951.
- [16] Ferguson, T.S. (1967). *Mathematical Statistics, A Decision Theoretic Approach*, Academic, New York.