

Kubokawa, Tatsuya

A unified approach to improving equivariant estimators. (English) Zbl 0816.62021
Ann. Stat. 22, No. 1, 290-299 (1994).

Summary: In the point and interval estimation of the variance of a normal distribution with an unknown mean, the best affine equivariant estimators are dominated by *C. Stein's* [Ann. Inst. Stat. Math. 16, 155-160 (1964; Zbl 0144.414)] truncated and *J. F. Brewster* and *J. V. Zidek's* [Ann. Stat. 2, 21-38 (1974; Zbl 0275.62006)] smooth procedures, which are separately derived. This paper gives a unified approach to this problem by using a simple definite integral and provides a class of improved procedures in both point and interval estimation of powers of the scale parameter of normal, lognormal, exponential and Pareto distributions. Finally, the same method is applied to the improvement on the James-Stein rule in the simultaneous estimation of a multinormal mean.

MSC:

62F10 Point estimation
62C99 Statistical decision theory
62F25 Parametric tolerance and confidence regions

Cited in **12** Reviews
Cited in **62** Documents

Keywords:

estimation of variance; inadmissibility; Brewster-Zidek estimator; noncentral chi-square distribution; normal distribution; best affine equivariant estimators; lognormal; exponential; Pareto distributions; James-Stein rule; simultaneous estimation; multinormal mean

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