

Classical and Bayesian inference

AMS 132

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Limitation of Bayes Estimators

- Bayes Estimator depends on $L(\theta, a)$ and $\xi(\theta)$.
- Choosing $L(\theta, a)$ might be difficult.
- The parameter space might be (large) multidimensional, and the statistician be interested only in few of them.

Limitations Maximum Likelihood Estimator

- The M.L.E. can underestimate θ : consider r.v.s uniformly distributed on $[0, \theta]$, and find the M.L.E. (what about Bayes estimator under square error loss?).
- The M.L.E. might not exist: consider r.v.s uniformly distributed on $(0, \theta)$, and find the M.L.E. (what about Bayes estimator under square error loss?).
- The M.L.E. might not be unique: consider r.v.s uniformly distributed on $(\theta, \theta + 1)$, and find the M.L.E. (what about Bayes estimator under square error loss?).