Confidence intervals

stats6257conf 625.6 - Confidence intervals

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Interval Estimation

Location, scale and location-scale families

Seeking shorter confidence intervals

sometimes want to optimise the length of the CI
(add text...)
We now want to evaluate

$$(*) \int_a^b f_Y(t)dt = 1 - \alpha$$

and find conditions which give a short confidence interval.

$$(*)B$$

$$\int_a^b \frac{t^{r-1}e^{-nt}}{\Gamma r(1/n)^r} dt = 1 - \alpha$$

Could choose cutoffs $\alpha/2$, i.e.

$$\int_0^{\alpha/2} \frac{t^{r-1}e^{-nt}}{\Gamma(r)(1/n)^r} dt = \frac{\alpha}{2}$$

A few more examples and background