Fundamentals of Statistical Modeling (VT20)

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Lab 2 (Extra material on convenient parametrizations)

Load the dataset and the `mlci` command

{{1}}

Exercise 1

So far, we've used the gamma distribution parametrized by parameters α and β. They are not interpretable.

{{2}}

The mean of a gamma distribution is equal to $\alpha\beta$ (see Wikipedia).

{{3}}

Sometimes it can be useful to parametrize the gamma distribution in such a way that one of its 2 parameters is equal to (a transform of) the mean.

We define a parameter for the mean: $E[Y] \equiv \eta = \alpha\beta$. Then, $\alpha = \eta/\beta$ (see the slide "Convenient Parametrizations" for an ananlogous example with the log-normal distribution).

Note that the log-likelihood of this model is identical to the one of the previous one. No surprise: the model is exactly the same, it's just its parametrization that changed.

{{4}}