THE RELATION OF GOODNESS OF FIT TO CONFIDENCE INTERVALS

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Abstract

Confidence intervals are by convention defined so that they contain a given "confidence", which is either coverage probability for frequentist intervals or Bayesian probability content for Bayesian credibility intervals. Alternatively, one could imagine defining intervals (or more generally regions in parameter space) which contain all parameter values which give good fits to the data. This latter definition may be closer to what physicists expect. Especially when the complement of a confidence interval (an exclusion region) is published, the reader may interpret that as the ensemble of parameter values excluded because they don't fit to the data. Why are exclusion regions not calculated that way? Should they be?

No formal written paper was produced for this talk.

The original slide presentation can be viewed on the web site:

`http://www.ippp.dur.ac.uk/statistics/program.html`