



Matching pseudocounts for interval estimation of binomial and Poisson parameters

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Abstract

For interval estimation of a binomial proportion and a Poisson mean, matching pseudocounts are derived, which give the one-sided Wald confidence intervals with second-order accuracy. The confidence intervals remove the bias of coverage probabilities given by the score confidence intervals. Partial poor behavior of the confidence intervals by the matching pseudocounts is corrected by hybrid methods using the score confidence interval depending on sample values.

Keywords: one-sided confidence interval; Cornish-Fisher expansion; score confidence interval; Wald confidence interval.