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Criteria for projected discovery and exclusion sensitivities of counting experiments

Monday 24 May 2021 16:30 (15 minutes)

The projected discovery and exclusion capabilities of searches are often quantified using the median expected p-value or its corresponding significance. However, this criterion can lead to flawed results, for example counterintuitively predicting lessened sensitivities if the experiment takes more data or reduces its background. We discuss the merits of several alternatives to the median expected significance, both when the background is known and when it is subject to some uncertainty. We advocate for standard use of the "exact Asimov significance" Z^{A} detailed in this talk.

Summary

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