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## Bootstrap-determined $p$ -values in lattice QCD

*Thursday 6 November 2025 14:30 (20 minutes)*

We present a method based on the bootstrap to determine  $p$ -values from Monte Carlo data, in particular those generated in a lattice QCD calculation, where we make no assumptions about the underlying distribution. By generating samples from the underlying data, we are able to naturally incorporate the effects of autocorrelations and non-normally-distributed samples, both of which skew the distribution away from the conventional  $\chi^2$  or  $t^2$  distributions. Additionally, with these methods we can estimate the  $p$ -values for uncorrelated fits and more elaborate fitting procedures for which these analytical distributions are also unsuitable. (This talks summarizes work published in 10.1103/PhysRevD.111.074514)

### Parallel Session (for talks only)

Algorithms and artificial intelligence

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