

Phenomenology 2019 Symposium



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ePump: error PDF Update Method Package

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It is crucial to reduce PDF (Parton Distribution Function) uncertainties in the LHC precision era, so one would be very curious to know what kinds of observables can reduce PDF uncertainties and to what extent. Following this idea, we present a software package ePump, based on Hessian approximation, which can quickly update a set of global-fit PDFs including error PDFs. ePump can reproduce the CT14HERA2 PDFs very well and can help identify the impact of each data set used in the CTEQ global-fit. Only about one third of the data sets dominate the fit. Finally, we use ePump to analyze how some new LHC data constrain PDFs.

Summary

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