

Statistics challenges in HEP

Wednesday, February 24, 2010 9:40 AM (40 minutes)

The LHC was built as a discovery machine, whether for a Higgs Boson or Supersymmetry. In this review talk we will concentrate on the methods used in the HEP community to test hypotheses. We will cover via a comparative study, from the LEP hybrid “CLs” method and the Bayesian TEVATRON exclusion techniques to the LHC frequentist discovery techniques. We will explain how to read all the exclusion and prospective discovery plots with their yellow and green bands and how to include systematics in a significance calculation. The review is aimed to be pedagogical.

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