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W mass and precision SM measurements

Monday 28 November 2022 10:00 (30 minutes)

A precise measurement of the mass of the W boson mass represents an important milestone of the LHC physics program to test the overall consistency of the Standard Model. In 2018 ATLAS experiment published a Mass measurement with 19MeV total uncertainty. Recently LHCb experiment published a new measurement compatible with the ATLAS measurement with 32 MeV total uncertainty. Both measurement are limited by physics modelling uncertainty.
The challenges related to the modelling of W-boson production and decay at LHC will be discussed.
The ultimate goal of LHC experiments is to reach 10MeV uncertainty on the W boson mass measurement. Ancillary measurements of Drell-Yan processes - which are fundamental input to reach this goal and reduce the physics-modelling uncertainties - will be presented.
The LHC results together with the recent Tevatron mW measurement will be also described in the context of the LHC Tevatron combination.
Finally very recent LHC experiment highlights will be also presented.

Declaration

I certify that I have checked that I am authorised to submit the abstract with the listed co-authors with their current affiliations

Change of Speaker

I understand that change of speaker is allowed provided that no participant gives more than one talk. Otherwise, we will ask the speaker to choose between one or the other abstract to be presented.

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