

"CMS Electroweak Measurements (Tau pol, α_{inv})"

Dr. Andrew Gilbert

CERN, Genf

The large proton-proton collision data sets delivered by the LHC have allowed for an unprecedented exploration of the standard model at the TeV scale. While often considered a discovery machine, with a rich search programme underway by the ATLAS and CMS experiments for new signatures, these data sets also allow for high precision tests of standard model predictions. This talk will review several recent measurements from the CMS experiment that focus on the electroweak sector. One is the direct measurement of the Z boson invisible width, resulting in the most precise single direct measurement to date, competitive with the combined result from LEP. A second is the extraction of the tau lepton polarisation. This is determined from both leptonic and hadronic tau lepton decays, in events where a Z boson decays to a tau pair. By exploiting specific kinematic and angular observables of the final states, the tau polarisation is determined, and can be interpreted as a constraint on the effective weak mixing angle.