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Precision Measurements of Electroweak Parameters with Z Bosons at the Tevatron

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We report on the extraction of sin2θ_eff(MZ) and an indirect measurement of the mass of the W boson from the forward-backward asymmetry of dilepton events in the Z boson mass region at the Tevatron. The data samplesof e+e− and μ+μ− events collected by the CDF detector correspond to the full 9.4 fb−1 run II sample and yield an effective electroweak mixing angle sin2θ_eff(MZ)=0.23222±0.00046. The corresponding result reported by the D0 collaboration with the full 9.4 fb−1 e+e− sample is sin2θ_eff(MZ)=0.23146±0.00047. The CDF collaboration also extracts the on-shell electroweak mixing angle sin2θW=0.22401±0.00044 which corresponds to an indirect measurement of the W boson mass MW(indirect)=80.327±0.023GeV. The quoted uncertainties include both statistical and systematic contributions.

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Classification de Session: Standard Model

Classification de thématique: Experiment