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W Mass Measurement at D0

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Abstract content
   (Max 300 words)

Within the Standard Model (S.M) of particle physics the W boson mass is sensitive to the mass of the (as yet unobserved) Higgs boson. The Higgs boson is the quantum of the Higgs field which generates the mass of elementary particles within the S.M. . Precision measurement of the W mass, top quark mass, and the Fermi coupling (G_F) allow one to constrain the allowed mass of the Higgs boson within this model.
The D0 collaboration has determined the mass of the W boson to be 80.375 GeV +- 0.023 GeV by combining two measurements (of 4.3 and 1 inverse femtobarn/s) where the identified W decayed to an electron and a neutrino after being produced at the Tevatron (proton-antiproton collisions at 1.96 TeV in the centre of mass frame).

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