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New Results and Combination of the Top-Quark Mass at CDF

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We present the final combination of the top-quark mass, M_t , performed by the CDF experiment at the Tevatron collider. The combination includes three recently published and two preliminary results from the CDF Run II data collected at 1.96 TeV center of mass collision energy. The analyses use the full Run II samples of 8.7- 9.3 fb⁻¹ of data. The latter measurements are combined with the CDF Run I published results (1998-2001). The combination includes measurements in the $t\bar{t} \rightarrow \text{lepton}+\text{jets}$, $t\bar{t} \rightarrow \text{dilepton}$, $t\bar{t} \rightarrow \text{all jets}$ and $t\bar{t} \rightarrow E_{\text{miss}}+\text{jets}$ final states. The resulting combined measurement of the top-quark mass is $M_t = 173.16 \pm 0.57$ (stat) ± 0.74 (syst) GeV/c², with a total uncertainty of 0.93 GeV/c².

Summary

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