Abstract Submitted for the APR07 Meeting of The American Physical Society

First Measurement of the W Boson Mass with CDF in Run II BODHITHA JAYATILAKA, Duke University, CHRISTOPHER HAYS, University of Oxford, ASHUTOSH KOTWAL, Duke University, LARRY NODULMAN, Argonne National Laboratory, OLIVER STELZER-CHILTON, University of Oxford, WILLIAM TRISCHUK, IAN VOLLRATH, University of Toronto, CDF COLLAB-ORATION — We describe a measurement of the W boson mass  $m_W$  using  $\approx 200$ pb<sup>-1</sup> of  $\sqrt{s}=1.96$  TeV  $p\bar{p}$  collision data from the Fermilab Tevatron collected with the CDF II detector. Using 63,964  $W \rightarrow e\nu$  candidates and 51,128  $W \rightarrow \mu\nu$  candidates, we measure  $m_W = 80.413 \pm 0.034$  (stat)  $\pm 0.034$  (sys) GeV/ $c^2$ . With a total uncertainty of 0.048 GeV/ $c^2$ , this is the single most precise  $m_W$  measurement to date.

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Date submitted: 05 Feb 2007

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