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Selection of Fully Reconstructed Hadronic B_s^0 Decays for the Observation of B_s^0-$\bar{B}_s^0$ Oscillations BRUNO CASAL, Universidad de Cantabria, CDF COLLABORATION — We present the neural network based selection of hadronic B_s^0 decay modes used for the time-dependent measurement of B_s^0-$\bar{B}_s^0$ oscillation frequency Δm_s. Using a data sample of 1 fb^{-1} of $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV collected with the CDF II detector at the Fermilab Tevatron Collider, we find signals of 5600 fully reconstructed hadronic B_s^0 decays. We measure the probability as a function of proper decay time that the hadronic B_s^0 candidate decays with the same or opposite flavor as the flavor at production. We find a signal for B_s-$\bar{B}_s$ oscillations and measure $\Delta m_s = 17.77 \pm 0.10$ (stat) $\pm$ 0.07 (syst) ps^{-1}. From this we extract $|V_{td}/V_{ts}| = 0.2060 \pm 0.0007$ (exp) + 0.0081 - 0.0060 (theor).

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