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B_s^0 Meson Lifetime and $\Delta\Gamma_s$ in the $B_s^0 \rightarrow K^+K^-$ Decay Mode

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The measurement of the $B_s^0 \rightarrow K^+K^-$ lifetime allows a determination of the decay width difference $\Delta\Gamma_s$ that is sensitive to possible new physics effects in penguin dominated B_s^0 decays. In Run II of the Fermilab Tevatron, the ability to trigger on hadronic decays, has allowed the CDF experiment to collect a large sample of $B_s^0 \rightarrow K^+K^-$ events from $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV. We report on the progress toward an updated measurement of the lifetime of B_s^0 mesons in this decay mode using a larger dataset than previous preliminary results.

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