

Measurement of the Front-Back Asymmetry in Top Quark Pair Production

- Measuring A_{fb} in $p\bar{p} \rightarrow t\bar{t}$ production in the lepton+jets channel with 1.9 fb^{-1}

$$A_{fb} = \frac{N_F - N_B}{N_F + N_B}$$

- The measurement is a test of discrete symmetries of the strong interaction at high energy
- Sensitive to C and P violating new physics in top pair production (Axigluons, Z' , etc.)
- QCD at NLO predicts: $A_{fb}^{Theory} = 0.04 \pm 0.01$
- The kinematic fitter is used to reconstruct the production angle and the resulting asymmetry is corrected for backgrounds, selection, and angle reconstruction effects

- The measured value, which is directly comparable to the theoretical value:

$$A_{fb}^{p\bar{p} \rightarrow t\bar{t}} = 0.17 \pm (0.07)^{stat} \pm (0.04)^{syst}$$

