

Measurement of the ratio of differential cross sections $\sigma(Z+b \text{ jet})/\sigma(Z+\text{jet})$ at DØ

The study of Z boson production processes in association with b quarks provide important tests of perturbative QCD calculations. We measure the ratio of cross sections, $\sigma(p\bar{p} \rightarrow Z + b)/\sigma(p\bar{p} \rightarrow Z + \text{jets})$, for associated production of a Z boson with jets as a function of the jet transverse momentum, jet pseudorapidity, Z boson transverse momentum, and the azimuthal angle between the Z boson and the closest jet for events with at least one b jet candidate. These measurements use data collected by the DØ experiment in Run-II of Fermilab's Tevatron Collider $p\bar{p}$ collisions at a center-of-mass energy of 1.96 TeV, and correspond to an integrated luminosity of 9.7 fb^{-1} . The results are compared to predictions from next-to-leading order calculations and various Monte Carlo event generators.

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