

Z Boson transverse momentum distribution, and ZZ and WZ production : measurements using 7.3-8.6 fb¹ of pp collisions at [square root s] = 1.96 TeV

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20425360&lokasi=lokal>

Abstrak

This work develops novel data analysis techniques enabling aspects of the standard model of particle physics to be tested with unprecedented precision using data from the DZero experiment at the high energy “Tevatron” proton-antiproton collider at Fermilab, Chicago. Vesterinen's measurements of the transverse momentum of Z bosons using the novel variable $\sqrt{s_T}$ have exposed deficiencies in the current state-of-the-art theoretical predictions for vector boson production at hadron colliders. These techniques are now being used in the experiments at CERN's Large Hadron Collider (LHC) and have stimulated considerable interest in the theoretical particle physics community. Furthermore, Vesterinen's measurements of the cross sections for the production of pairs of vector bosons (WZ and ZZ) are to date the most precise ever made.