

First Observation of Bottom Baryon Σ_b States at CDF

Igor V. Gorelov
(For the CDF Collaboration)
Department of Physics and Astronomy
University of New Mexico

Abstract

We present the latest results on the search of bottom baryon states Σ_b using $\sim 1.1 \text{ fb}^{-1}$ of CDF data. The study is performed with a world largest sample of fully reconstructed Λ_b decays collected by CDF II detector in proton-antiproton collisions at $\sqrt{s} = 1.96 \text{ TeV}$ using the hadronic trigger path. For the first time we observe the four lowest-lying resonant states $\Sigma_b^\pm, \Sigma_b^{*\pm}$ in the fully reconstructed decay mode of $\Lambda_b^0 \pi^\pm$