The Studies of the $\gamma\gamma \to p\overline{p}$ Production by the BELLE Detector

Chen-Cheng Kuo, Shin-Chuan Kao, Augustine E. Chen

Department of physics, National Central University, Taiwan R.O.C.

The $\gamma\gamma \to p\overline{p}$ events produced by the photon-photon collisions, where the two photons are emitted from the colliding e^+e^- beams of the accelerator KEKB, are collected by the BELLE detector.
A sample of data corresponding to a toal integrated luminosity of $\sim 31\ fb^{-1}$ is analyzed. The rejection of the main backgrounds: $\gamma\gamma \to e^+e^-, \mu^+\mu^-, \pi^+\pi^-$ and K^+K^- is implemented by a particle identification algorithm using the likelihood method. The differential cross-section of the $p\overline{p}$ production as a function of the two-photon invariant mass and the $\cos\theta^*$, where the θ^* is the angle between the proton and the $\gamma\gamma$ axis in the two-photon center-of-mass system, are measured. Some unknown structures in the distribution of the two-photon invariant mass are observed.

References

[1] CLEO Collab., M. Artuso et al., Phys. Rev. **D** 50 (1994) 5484.
[2] VENUS Collab., H.Hamasaki et al., Phys. Lett. **B** 407 (1997) 185.