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02 R MEASUREMENTS AND IMPLICATIONS FOR THEORY

Precise measurement of the $e^+e^-\to\pi^+\pi^-(\gamma)$ cross section with the initial state radiation method at BABAR

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摘要 We present a precise BABAR measurement on the cross section of the process $e^+e^-\to\pi^\pm\pi^\mp(\gamma)$ from threshold to an energy of 3 GeV with the initial state radiation (ISR) technique, using 232 fb^{-1} of data collected with the BABAR detector at e^+e^- center-of-mass energies near 10.58 GeV. The ISR luminosity is determined from a study of the leptonic process $e+e-\to\mu+\mu-\gamma(\gamma)$. The leading-order hadronic contribution to the muon magnetic anomaly calculated using the $\pi\pi$ cross section measured from threshold to 1.8GeV is $(514.1\pm2.2(stat)\pm3.1(syst))\times10^{-10}$.

关键词 pion form factor, ISR, g-2, BABAR

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