

Determination of the magnetic dipole moment of the rho meson using preliminary data from the BaBar collaboration

Abstract content

We determine the magnetic dipole moment of the rho meson using preliminary data from the BaBar Collaboration for the $e^+ e^- \rightarrow \pi^+ \pi^- 2\pi^0$ process, in the center of mass energy range from 0.9 to 2.2 GeV. We describe the $\gamma^* \rightarrow 4\pi$ vertex using a vector meson dominance model, including all intermediate resonance contributions. We find that $\mu_{\rho} = 2.1 \pm 0.5 \cdot [e/2 m_{\rho}]$. In addition, we obtain the branching ratio $BR(\rho^0 \rightarrow \pi^+ \pi^- 2\pi^0) = 1.7 \pm 0.6 \times 10^{-5}$.

Summary

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