

# Extracting a data driven magnetic dipole moment for the $\rho$ meson

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We obtain the value of the magnetic dipole moment of the  $\rho$  meson, using data from the BaBar Collaboration for the  $e^+e^- \rightarrow \pi^+\pi^- - 2\pi^0$  process. The considered center of mass energy range is from 0.9 to 1.8 GeV. We describe the  $\gamma^* \rightarrow 4\pi$  vertex using a vector meson dominance model, including the intermediate resonant contributions relevant at these energies. We find  $\mu_\rho = 2.7 \pm 0.3$  in  $e/2m_\rho$  units. We improve on the previous extracted value, where preliminary data from the same collaboration was used, by considering definite data, better grounded values of the parameters involved and explicit gauge invariant description of the process.

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<https://indico.nucleares.unam.mx/event/2370>

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