Contribution ID: **366** Type: **Parallel Talk**

Measurement of $e^+e^- \to \pi^+\pi^-\pi^0$ with ISR events at $BABAR$ and calculation of its contribution to the $(g-2)_\mu$

Friday, 8 July 2022 09:15 (15 minutes)

We present a study of the process $e^+e^- \to \pi^+\pi^-\pi^0$ at $BABAR$ using the initial-state radiation technique. The analysis is based on the full $BABAR$ data set, 469 fb^{-1}, recorded at and near the $\Upsilon(4S)$ resonance. From the fit to the measured 3π mass spectrum we determine the products $\Gamma(V \to e^+e^-)calB(V \to 3\pi)$ for the omega and phi resonances, and $calB(\rho \to 3\pi)$. The latter isospin-breaking decay is observed with 6 sigma significance. The $e^+e^- \to \pi^+\pi^-\pi^0$ cross section is measured from 0.62 GeV to 3.5 GeV. The measured cross section is used to calculate the leading-order hadronic contribution to the muon magnetic anomaly from this exclusive final state with improved accuracy.

In-person participation

Yes

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