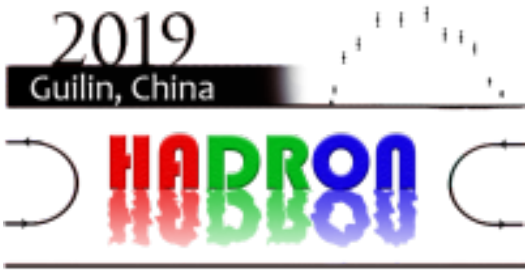

Contribution ID: **55** Type: **Poster**

Studies of the ISR process e+e- -> pi+pi-pi0gamma at the phi mass with the KLOE detector

Experimental measured value of the muon magnetic moment
$a_\mu = \frac{g_\mu - 2}{2}$
has a long-standing and well known discrepancy comparing with Standard Model prediction that has been narrowed down within a range $3.2 - 3.6\,\sigma$ after years of efforts made by experimentalists and theoreticians. Previous results of dipion cross section $\sigma_{\pi\pi} = \sigma(e^+e^- \to \pi^+\pi^-)$ from KLOE have provided comprehensive and substantial studies on the largest experimental input from hadronic contribution. In order to deepen the understand of theoretical uncertainty for a_μ, it is natural to extent the studies to three pion cross section, which is the second largest hardronic contribution to a_μ.

The initial state radiation (ISR) process $e^+e^- \to 3\pi$ has been studied at a center-of-mass energy $\sqrt{s} \approx 1.019$ GeV close to the ϕ resonance using a 1.7 fb^{-1} data sample collected with KLOE detector at the DAΦNE year 2004/2005. In this analysis, we have studied the visible section $\sigma^{\mathrm{vis}}_{3\pi}$ of process $e^+e^- \to \pi^+\pi^-\pi^0$ for the effective center-of-mass energy $\sqrt{s'}$ corresponds to omega mass range $M_{3\pi} \in [720, 900]$ MeV/c^2.
With the same dataset, a further study of $\mathcal{C}$-violating decay $e^+e^- \to \phi \to \omega\gamma$ is being performed based on a careful investigation of the ISR process, which is the major background with identical 3π final state.

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