

# KLOE Measurement of the $\sigma(\pi^+\pi^-(\gamma))$ cross section and the $\pi$ - $\pi$ contribution to the muon anomaly

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The KLOE experiment, operating at the Frascati  $\phi$ -factory DAPHNE, has measured the differential cross section for the process  $e^+ e^- \rightarrow \pi^+ \pi^- \gamma$  as a function of the  $\pi^+\pi^-$  invariant mass,  $M(\pi\pi)$ .

From the measured differential  $\$M(\pi\pi)$  spectrum inclusive of final state radiation, the total  $\sigma(\pi^+\pi^-(\gamma))$  cross section is determined using the QED radiator function.

The final result of the analysis of events with Initial State Radiation (ISR) photons emitted at small angle is presented, from a sample corresponding to an integrated luminosity of 240 pb<sup>-1</sup> of data taken on peak of the  $\phi$  meson.

From the  $\sigma(\pi^+\pi^-(\gamma))$  cross section, the  $\pi$ - $\pi$  contribution to the muon magnetic anomaly is obtained in the mass range ( 0.592 <  $M(\pi\pi)$  < 0.975 ) GeV with a statistical error of 0.1%, an experimental systematic error of 0.6% and a theoretical systematic error of 0.6%.

Preliminary results from an independent analysis of events with an ISR photon detected at large angle are presented, from a sample corresponding to an integrated luminosity of 230 pb<sup>-1</sup> of data taken off the  $\phi$  peak. This selection allows to reach the  $\pi\pi$  threshold with suppressed background from  $\phi$  decays.

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