

## Study of Neutral-Pion Pair Production in Two-Photon Scattering at BESIII

*Tuesday, 17 October 2023 16:56 (3 minutes)*

The anomalous magnetic moment of the muon,  $a_\mu = (g - 2)_\mu/2$ , is one of the most precisely measured observables of the Standard Model. However, its value shows a sizeable discrepancy to the Standard Model prediction. It is still under discussion whether this discrepancy is a hint for New Physics or a proof for the limited understanding of strong interaction at low energies. To get a better understanding of this discrepancy, one needs to reduce the uncertainty of both, the Standard Model prediction and the direct measurement.

Information on the production of pion pairs in two-photon fusion processes plays an important role in the dispersive calculation of the hadronic light-by-light scattering contribution to  $a_\mu$ , which is one of the two large contributions to the Standard Model predictions uncertainty. The BESIII experiment, located at the institute of high energy physics in Beijing/China, offers a perfect testbed for the investigation of two-photon processes at small momentum transfers. The process  $e^+e^- \rightarrow e^+e^-\pi^0\pi^0$  is measured at the BESIII experiment at centre-of-mass energies between 3.68 and 4.7 GeV with a total integrated luminosity of more than  $20 \text{ fb}^{-1}$ , with more data being available in future. This presentation will discuss the current status of the analysis.

### Parallel Session

Poster Session

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