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## Measurement of the anomalous magnetic moment in ultraperipheral collisions with ALICE at the LHC

*Wednesday, 6 December 2023 15:10 (20 minutes)*

The measurement of the anomalous magnetic moment of leptons  $a_l$  provides a sensitive test of QED and allows one to test for the existence of New Physics (NP) beyond the Standard Model. Since the NP effect is expected to scale with  $m_l^2$ , the tauon with its heavy mass promises to be the most suitable lepton for such a test. However, due to its short lifetime, the spin precessing methods used to determine  $a_{e,\mu}$  with high accuracy cannot be applied in this case. Alternatively, one can exploit the fact that the  $\gamma - \tau$  vertex is sensitive to  $a_\tau$ , such as in the  $\gamma + \gamma \rightarrow \tau + \tau$  process. Ultraperipheral PbPb collisions (UPCs) at the LHC provide a clean environment to study two-photon induced processes. In this talk, we discuss the prospects of measuring  $a_\tau$  in UPCs with ALICE at the LHC with data from the ongoing Run 3 data campaign.

### **Name of collaboration or list of co-authors**

ALICE

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