

Feasibility studies of tau-lepton anomalous magnetic moment measurements with ultra-peripheral collisions at the LHC

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Ultra-peripheral heavy-ion collisions provide a unique opportunity to study two-photon induced processes. The production of tau lepton pairs in the process $Pb + Pb \rightarrow Pb + Pb + \tau^+ \tau^-$ at the LHC is particularly interesting since its cross section is sensitive to poorly known electromagnetic moments of the τ -lepton. Possible deviations of the anomalous magnetic moment $a_\tau = (g - 2)/2$ of the τ -lepton from the Standard Model predictions may indicate the presence of effects beyond the Standard Model, such as contributions of supersymmetric particles or composite nature of the τ -lepton. In this contribution, the prospects of exclusive ditau cross section measurements in ultra-peripheral Pb-Pb collisions at the LHC will be discussed and projections for possible a_τ limits will be presented.

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