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Photon-Photon scattering in the resonance region at midrapidity at the LHC

A study is presented to extend the measurements of photon-photon scattering in ultra-peripheral Pb-Pb collisions at the LHC into the mass region of the pseudoscalar resonances eta and eta'. The elementary photon-photon scattering cross section discussed in Ref.1 is extended to the low masses of these pseudoscalars. The main background to two-photon final states, arising from double pi0 production with two of the four decay photons escaping detection, is examined, and possible kinematical conditions are discussed to optimize the signal-to-background ratio for such measurements at mid-rapidity.

Ref.1:
M. Klusek-Gawenda, P. Lebiedowicz, A. Szczurek, Phys.Rev.C93 (2016) no.4, 044907.

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