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Enhancement of low-mass dileptons in ultraperipheral collisions

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Spectra of dilepton pairs in ultraperipheral nuclear collisions are calculated. It is shown that production of low-mass e^+e^- pairs is enhanced due to the Sommerfeld-Gamow-Sakharov (SGS) factor. This effect is especially strong near the threshold of creation of unbound pairs with low masses in the two-photon fusion. Coulomb attraction of the non-relativistic components of such pairs may lead to the increased intensity of 511 keV photons. It can be recorded at the NICA collider and has some astrophysical implications. The analogous effect can be observed at LHC in dilepton production.

Preferred track

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