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Emission of neutrons and protons in photoproduction on nuclei in UPC at the LHC and EIC

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The ultrarelativistic collisions of the heavy ions provide rich spectrum of possibilities of discussing the nucleus response to photons.
Newly published neutron and proton multiplicities measured in the ALICE experiment in ultraperipheral conditions allow investigating the influence of the electromagnetic fields on colliding nuclei for the ^{208}Pb+^{208}Pb at $\sqrt{s_{NN}}$ = 5.02 TeV. The theoretical predictions are done within hybrid model(s) including equivalent photon approximations (EPA), GiBUU or INCL modeling preequilibrium processes and generating the ensemble of excited nuclei which decay with statistical afterburners: GEM2 and GEMINI++.
The cross sections of the mass-charge distributions of nuclear remnants as well as the neutrons, protons and other charged particle multiplicities are estimated. We concentrate on production of protons and isotopes coming from the electromagnetic dissociation. Special attention is devoted to emission of a single proton. The cross section for 1p emission is very close to the maximal available one based on reactions of photon with individual nucleons. Our pre-equilibrium processes explain simultaneusly the tail of neutron energy distributions in the nuclear rest frame observed in $\gamma + A$ collisions in the past.
A possibility to study such processes in $e + A$ collisions at EIC will be presented.

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