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Forward neutrons from electromagnetic dissociation of ^{208}Pb at the LHC

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Experimental results of ALICE collaboration on the emission of forward neutrons in ultraperipheral collisions of ^{208}Pb nuclei at $\sqrt{s_{\text{NN}}} = 2.76$ and 5.02 TeV are reviewed. Electromagnetic dissociation (EMD) events with the lowest multiplicity of 1, 2 or 3 neutrons dominate at both collision energies. The cross sections for 1n – 5n emission with and without protons were measured by means of forward zero degree calorimeters (ZDCs). The obtained cross sections for neutron emission accompanied by an arbitrary number of protons can be used to validate various EMD models. According to the Relativistic ELectromagnetic DISSociation model (RELDIS), the cross sections of protonless neutron emission, measured for the first time by ALICE at $\sqrt{s_{\text{NN}}} = 5.02$ TeV, can be considered as upper limits for the cross sections of the production of the respective secondary nuclei, $^{207,206,205,204,203}\text{Pb}$, in EMD of ^{208}Pb .

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