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Electromagnetic Dissociation Measurement at LHC with ALICE ZDC (15'+5')

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New data on neutron emission in electromagnetic dissociation Pb ions at LHC will be presented. The measurement was performed by means of the Zero Degree Calorimeters (ZDC) of the ALICE experiment, which consists of two identical sets of detectors located at opposite sides with respect to the beam intersection point, ~ 114 m away from it. Each set of detectors include a neutron (ZN) and a proton (ZP) Zero Degree Calorimeter. In particular the ZN is placed at zero degrees with respect to the LHC axis and detects neutral particles at pseudorapidities $\eta > 8.7$. During the 1.38+1.38 ATeV Pb-Pb data taking, a dedicated run has been performed, requiring a minimum energy deposition in at least one of the two ZNs. The trigger tagged essentially neutrons emitted in the Coulomb breakup of the excited lead nucleus. The neutrons from electromagnetic dissociation are expected to be emitted very close to beam rapidity and with an average energy close to the one of the beam. Thanks to the good ZN energy resolution, the measured energy spectra show a clean separation of the single neutron contribution from the 2n, 3n... ones. The experimental results will be presented and compared to theoretical predictions.

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