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(G*) POS-J87 – Magnetic monopole production in heavy-ion ultraperipheral collisions at the LHC

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The possible existence of the magnetic monopole is strongly motivated by theories and extensively tested in experiments. Searches at the LHC have been exclusively conducted with proton-proton collisions. However, the LHC not only collides protons but also heavy ions. Highly relativistic ultraperipheral collisions (UPC), where the ion-ion impact parameter exceeds the ion's diameter, act as a strong source of electromagnetic radiation. Characterized by minimal hadronic activities, the UPC creates a clean environment to study magnetic monopoles produced via photon-fusion processes. I will present a generator-level study of this production mode, including the modelling of the photon energy spectrum and the monopole interaction required to compute the production cross section at the maximal collision energy of the LHC.

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