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The STARlight Monte Carlo Event Generator

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The STARlight Monte Carlo event generator was developed more than 20 years ago and has been used extensively for the study of ultra-peripheral relativistic heavy ion collisions ever since.

STARlight can calculate cross sections for the two-photon production of dilepton pairs and single mesons and for both coherent and incoherent photonuclear production of vector mesons. The photon spectrum is calculated in impact parameter space, and the photonuclear vector meson cross section is calculated with a Glauber model. The effect of quantum-mechanical interference can be included. STARlight also generates Monte Carlo events. Most short-lived mesons are decayed within STARlight, but an interface with Pythia is used for complex decays, such as mesons with multiple final states. General photonuclear interactions can be simulated through an interface with DPMJET. STARlight has been shown to reproduce many features of ultra-peripheral collisions quite well across a range of energies and colliding species.

An overview of the main features of STARlight will be presented, and recent updates will be discussed. Some comparison to other models will also be presented.

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