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Upcgen: An event generator for dilepton pair production in UPCs

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We present Upcgen, a Monte Carlo event generator designed for simulating dilepton pair production in ultra-peripheral collisions (UPCs) [1]. In Upcgen the dilepton pair production cross section A+A -> A+A + ll is calculated by folding the elementary gamma gamma -> ll cross section with the two-photon luminosity produced by the colliding nuclei. The calculation of the two-photon luminosity is based on realistic nuclear form factors and the elementary cross section is calculated with the generalized vertex approach. The generator offers a possibility to set the photon polarization and hence study related effects. In addition the value of the lepton anomalous magnetic moment can be set to an arbitrary value which is especially interesting for studies of the tau g-2 via ditau production measurements in UPCs.

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