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Modelling semi-exclusive particle production at the LHC

In this talk we will present the results of a new calculation of semi-exclusive photon-initiated production, that is either with intact outgoing protons or rapidity gaps present in the final state, and with no colour flow between the colliding LHC protons. This accounts for both the possibility of proton dissociation and the survival factor probability of no additional proton-proton interactions, including its kinematic and process dependence. Our calculation is provided in the publicly available SuperChic 4 Monte Carlo (MC) generator, and can be passed to a general purpose MC for showering and hadronization of the final state.

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