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Diffractive pp cross sections at the LHC implemented in PYTHIA8

We present predictions for the total and diffraction dissociation pp cross sections at the LHC based on a novel, fully unitarized parton model approach in which diffraction is derived from inclusive proton PDFs and QCD color factors. The processes of single diffraction, double diffraction, and central diffraction dissociation (double Pomeron exchange) have been included as an option in the latest version of PYTHIA8, providing a powerful tool for further studies of diffraction and exclusive production, as well as for estimating accidental trigger rates and overlap backgrounds that affect practically all measurements at the LHC.
