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Diffraction physics with ALICE at the LHC

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The ALICE experiment is equipped with a wide range of detectors providing excellent tracking and particle identification in the central barrel, as well as forward detectors with extended pseudorapidity coverage, which are well suited for studying diffractive processes. In this talk, we shall highlight cross section measurements of single and double diffractive processes performed by ALICE in pp collisions at $\sqrt{s} = 0.9, 2.76, 7 \text{ TeV}$. The plans for $\sqrt{s} = 8 \text{ TeV}$ pp data treatment will be also discussed. Currently, ALICE is studying double-gap events in pp collisions at $\sqrt{s} = 7 \text{ TeV}$, which gives an insight into central diffraction processes. We shall discuss the current status and perspectives for central diffraction studies in the ALICE experiment. The upgrade plans for diffraction studies, further extending the pseudorapidity acceptance of the ALICE setup for the coming Run 2 of the LHC, will be outlined.

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