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Characterizing pp and p-Pb collisions using very forward energy with ALICE

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The very forward energy in hadron-hadron collisions contains information about the fragmentation of the projectile and the target, providing direct insights into the initial stages of high-energy hadronic collisions. By constraining the very forward energy, one can control the event activity in the collision. Results on very forward energy, measured by the ALICE zero degree calorimeters (ZDCs), and its correlation with particle production at midrapidity will be presented for $\sqrt{s} = 13$ TeV pp collisions and $\sqrt{s_{NN}} = 8.16$ TeV p-Pb collisions. Traditional underlying event (UE) studies at midrapidity provide an alternative measure of the event activity. In this poster, these two different event-activity measurements will be compared for pp collisions. Finally, the results will be compared with the expectations of hadronic interaction event generators, such as PYTHIA and EPOS, to test if models can describe the forward fragmentation, where observables are mainly driven by non-perturbative QCD physics.

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