

Jet performance and pileup mitigation in Run3 in CMS

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Every bunch crossing at the LHC causes not just one proton-proton interaction, but several which are called “pileup”. With the increasing luminosity of the LHC the number of pileup interactions per bunch crossing increases and it will reach up to 200 during high-luminosity LHC operation. Removing the pileup from an event is essential, because it does not only affect the jet energy but also other event observables, for example the missing transverse energy, the jet substructure, jet counting and the lepton isolation. In addition, jets as an experimental signature of energetic quarks and gluons, need to be calibrated in order to have the correct energy scale. A detailed understanding of both the energy scale and the transverse momentum resolution of jets at the CMS is of crucial importance for many physics analyses. In this talk we present recent developments in terms of jet energy scale and resolution, substructure techniques and pileup mitigation techniques.

Alternate track

1. Strong Interactions and Hadron Physics

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Yes

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