

CMS event reconstruction status in Run 2

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LHC Run2 began in April 2015. With the restart of the collisions in the CERN Large Hadron Collider. In the perspective of the offline event reconstruction, the most relevant detector updates appeared in 2017: they were the restructuring of the pixel detector, with an additional layer closer to the beams, and the improved photodetectors and readout chips for the hadron calorimeter, which will eventually allow a finer longitudinal segmentation. The long shutdown between Run1 and Run2 was instrumental for the optimization of the reconstruction code and for the introduction of new algorithms to mitigate sensitivity to increased pileup, especially to out-of-time contribution with advent of 25 ns separation between collisions compared to 50 ns in Run1. Such an optimization continued in the following years, when the reconstruction code of CMS evolved together with the improving of the performance of the LHC. We will describe here the current status of the reconstruction software of the CMS experiment, with emphasis on some of the recently integrated developments.

Authors: PERROTTA, Andrea (Universita e INFN, Bologna (IT)); KRUTELYOV, Slava (Univ. of California San Diego (US))

Presenter: PERROTTA, Andrea (Universita e INFN, Bologna (IT))

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