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CMS Detector Description for Run II and Beyond

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CMS Detector Description (DD) is an integral part of the CMSSW software multithreaded framework. CMS software has evolved to be more flexible and to take advantage of new techniques, but many of the original concepts remain and are in active use. In this presentation we will discuss the limitations of the Run I DD model and changes implemented for the restart of the LHC program in 2015. Responses to Run II challenges and transition to multithreaded environment are discussed.

The DD is a common source of information for Simulation, Reconstruction, Analysis, and Visualisation, while allowing for different representations as well as specific information for each application. The DD model usage for CMS Magnetic field map description allows seamless access to variable field during the same run. Examples of the integration of DD in the GEANT4 simulation and in the reconstruction applications are provided.

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