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Status and Design of Muon Reconstruction at the Large Hadron Collider with the CMS detector ADAM EVERETT, NORBERT NEUMEIS-TER, CHANG LIU, Purdue University, CMS COLLABORATION — The Compact Muon Solenoid (CMS) is a general purpose detector with a design goal to ensure efficient and accurate identification and reconstruction of muons. The CMS detector thus has a sophisticated muon system made up of tracking chambers and dedicated trigger chambers. The global muon reconstruction algorithms combine muons reconstructed in the three types of dedicated muon detector components with tracks reconstructed in the silicon tracker. The muon reconstruction software employs a modular design which allows muon reconstruction offline with the full calibration and detector readout. The modular design also allows muon reconstruction to be used in online event selection (HLT). We present and discuss the design, implementation, and performance, obtained on simulated data, of the CMS muon reconstruction and identification software.

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