CMS Detector and Physics Simulation

The CMS simulation based on the Geant4 toolkit and the CMS object-oriented framework has been in production for almost two years and has delivered a total of more than a 100 M physics events for the CMS Data Challenges and Physics Technical Design Report studies.
The simulation software has recently been successfully ported to the new CMS Event-Data-Model based software framework. In this paper, we present the experience from two years in physics production, the
migration process to the new architecture and some newly-commissioned features for specific studies (e.g. exotic particles) and different operational scenarios in terms of hit simulation, event mixing and digitization.

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