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Monte Carlo Production Management in CMS Experiment

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Monte Carlo (MC) samples are the essential components for almost all particle physics related experimental analyses. These samples are widely used for the preparations of physics analyses and for predictions regarding future experiments. The MC production for a large-scale experiment like CMS is a huge effort in which billions of simulated events for thousands of individual physics processes are produced, with different conditions (e.g. detector alignment), different inputs (e.g. parton shower v/s ME generators) and many workflows (e.g. parametrised simulation vs detailed GEANT-based simulation). In 2012, the web-based service Monte Carlo Management (McM) was developed and put in the production in order to aggregate the information needed for the configuration and prioritization of the events production, to ensure the book-keeping and all the processing requests placed by the physics analysis groups as well as to interface with the CMS production infrastructure. This talk describes the strategy followed by the CMS experiment to collect, manage, process and track MC requests, as well as the tools written and deployed to satisfy the MC needs of each physics group with automated computing operations tools.

Primary author: CHAHAL, Gurpreet Singh (Chulalongkorn University (TH))

Co-authors: ASAVAPIBHOP, Burin (Chulalongkorn (TH)); SUWONJANDEE, Narumon (Chulalongkorn (TH))

Presenter: CHAHAL, Gurpreet Singh (Chulalongkorn University (TH))

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