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Experience of BESIII data production with local cluster and distributed computing model

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The BES III detector is a new spectrometer which works on the upgraded high-luminosity collider, the Beijing Electron-Positron Collider (BEPCII). The BES III experiment studies physics in the tau-charm energy region from 2GeV to 4.6GeV . Since spring 2009, BEPCII has produced large scale data samples. All the data samples were processed successfully and many important physics results have been achieved based on these samples. Doing data production correctly and efficiently with limited CPU and storage resources is a big challenge. This paper will describe the implementation of the experiment-specific data production for BESIII in detail, including data calibration with event-level parallel computing model, data reconstruction, inclusive Monte Carlo generation, random trigger background mixing and multi-stream data skimming. Now, with the data sample increasing rapidly, there is a growing demand to move from solely using a local cluster to a more distributed computing model. A distributed computing environment is being set up and expected to go into production use in 2012. The experience of BESIII data production, both with a local cluster and with a distributed computing model, is presented here.

Summary

Large scale data samples from BESIII have been successfully processed. And more data is accumulated. The experience of BESIII data production, both with a local cluster and with a distributed computing model is presented.

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