

The Introduction of Data Analysis System of MDC for BEPCII/BESIII

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The BEPCII/BESIII(Beijing Electron Positron Collider / Beijing Spectrometer) had been installed and operated successfully in July 2008 and has been commissioning since Sep. 2008. The luminosity has reached $1.31032 \text{ cm}^{-2}\text{s}^{-1}@489\text{mA}530\text{mA}$ with 90 bunches now. About 13M psi(2S) physics data is collected by BESIII.

The offline data analysis system of BESIII have been tested and operated to handle the real experiments data. The data analysis system of the MDC(Main Drift Chamber) includes the event reconstruction, track fitting, offline calibration and events start time algorithm and Monte Carlo tuning between the MC data and real data. Among them, the Event Start Time Determination is the first step of charged track reconstruction of MDC. It is the important process in the Charged particle track reconstruction of BESIII offline data analysis, because of the multi-bunch colliding mode used in the BEPCII, the pipeline arrangement method of trigger system is used in the BESIII data acquisition system, a special time measurement method is used for the MDC electronic system.

The performance of the software System of MDC, includes the tracking efficiency, CPU consume, the preliminary results of offline calibration and Monte Carlo tuning of MDC for real experiment data are presented. The preliminary performance of MDC is indicated: the spatial resolution is about 128um, the momentum resolution is about 0.81%.

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Primary author: Dr XIANG, Ma (Institute of High energy Physics, Chinese Academy of Sciences)

Presenter: Dr XIANG, Ma (Institute of High energy Physics, Chinese Academy of Sciences)

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