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Physical Study of the BES3 Trigger System

Tuesday, 14 February 2006 16:00 (20 minutes)

Physical study is the base of the hardware designs of the BES3 trigger system. It includes detector simulations, generation and optimization of the sub-detectors' trigger conditions, main trigger simulations (Combining the trigger conditions from different detectors to find out the trigger efficiencies of the physical events and the rejection factors of the backgrounds events.) and hardware implementation feasibility considerations.

The detector simulations are based on the GEANT3 and the others are based on the self-coded software in which the MDC (Main Drift Chamber), EMC (ElectroMagnetic Calorimeter), TOF (Time Of Flight) and main trigger sub-triggers are included. Schemes, procedure and typical results of the trigger system study will be introduced in some detail.

From the physical studies, we determined the preliminary trigger tables and get the corresponding trigger efficiencies of the physical events and the rejection factors of the backgrounds events. Also determined are the hardware schemes of the whole trigger system and all of the sub-trigger systems.

All are going forward smoothly. A brief introduction of the status of the hardware designs of the trigger system will be presented. Finally, there will be a summary.

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