

Design and Study of Electromagnetic Calorimeter for Super Tau-Charm Facility

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Modern e^+e^- colliders will reach an exceedingly high level of luminosity, like SuperKEKB, Super Charm-Tau Factory (SCTF) proposed by Russia, and Super Tau-Charm Facility (STCF) proposed by China. Under such a high event rate and additional beam background, the electromagnetic calorimeter should be capable of maintaining good energy and position resolution while dealing with pile-up pulses and fake signals. A calorimeter system based on fast pure CsI crystal, read out by avalanche photodiodes, highlighting good time resolution and high granularity is designed for STCF. This talk will expand from three aspects: Tests of the scintillation counter; Geometry optimization and simulated performance of calorimeter system; Severe performance deterioration caused by beam background with possible solutions.

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No, this is an entirely new submission.

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