Design of Mechanical Structure and Analogue Readout for the Silicon Charge Detector on the preACCESS-CREAM

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A silicon charge detector is used to determine the charge of the incident cosmic ray. We designed the mechanical structures and the analogue front-end readout electronics for the CREAM Silicon Charge Detector (SCD). The SCD consists of 26 ladders, and each ladder has 7 individual silicon sensor modules and an analog readout board. The mechanical structures of the SCD will be assembled with a scintillator hodoscope. And the analogue readout board contains a CR1.4 ASIC chip which reads out 16 channels of electric signals from silicon pixels. It pre-amplifies, shapes, and multiplexes incoming analogue signals with a track and hold processing, which are subsequently digitized by ADC in the following readout chain. A final design and assembly of mechanical structures and a result on the performance of the analogue readout are presented.