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The Silicon Charge Detector of the High Energy Cosmic Radiation Detection facility

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The High Energy Cosmic Radiation Detection (HERD) facility is a large field-of-view and high-energy cosmic ray detector planned to be installed on the Chinese Space Station in 2027. The Silicon Charge Detector (SCD) is a specialized HERD sub-detector measuring with accuracy the cosmic ray absolute charge magnitude Z , separating chemical species in cosmic rays from hydrogen ($Z = 1$) to iron ($Z = 26$) and beyond. The SCD concept is based on layers of single-sided micro-strip sensors able to measure energy loss and coordinates of the traversing particle. The status of the SCD design, the expected performances, and its prototyping will be discussed.

Collaboration

HERD SCD Collaboration

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