

The Scintillating Fiber Tracker of the HERD facility

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The High Energy cosmic-Radiation Detection facility (HERD) will be one of the future astronomy missions on board the Chinese Space Station (CSS).

The installation of HERD on the CSS is planned for 2025, for an operation of at least 10 years. HERD is composed of an almost cubic calorimeter, a tracking system, plastic scintillator detectors, silicon charge detectors, and a transition radiation detector.

The tracker, made of scintillating fibres connected to SiPM arrays, will provide a full coverage of the 5 sensitive sides of the calorimeter, allowing for a sub-degree angular resolution and multiple independent measurements of the charge of the nuclei. We will present the tracker design, the DAQ electronics as well as the SiPM arrays. The prototype fibre module tests in particle beams at CERN will be presented. The space qualification tests (vibration and thermal vacuum tests) of two x-y tracking planes of $\sim 1\text{m}^2$ partially equipped with fully functioning modules will be presented.

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No, this is an entirely new submission.

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