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Response of Micro Pixel Chamber to heavy ions with the energy of several hundred of MeV/n

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Astronauts have to receive the risk of radiation exposure in space. The radiation dose rate is about a hundred times as much as that on the ground. Hence, precise radiation dosimetry in space is necessary to control the health of astronauts. We started to develop a new dosimeter named "Position Sensitive Tissue Equivalent Proportional Counter (PS-TEPC)" to measure Linear Energy Transfer (LET) of cosmic-ray precisely. The PS-TEPC consists of the "Micro Pixel Chamber (μ -PIC)" which is one of the micro-pattern gas detectors. We performed the heavy ion irradiation test at HIMAC beam line to evaluate the response of the μ -PIC to the heavy particles. The energy deposit and 3-dimensional tracks of the heavy ions are successfully observed, and the performances were evaluated. We report the result of the performance test of the μ -PIC at HIMAC and the future prospect of the PS-TEPC.

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