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Performance of CMOS pixel detector IU233N5-Z damaged with 200 MeV proton beam

CMOS pixel detectors have a fine pixel size of 1-10 μm and are planned to use in X-ray astrophysical observations. ~100 MeV protons inside South Atlantic anomaly dominate the radiation damages for the detectors onboard satellites. We irradiated 10 Gy of 200 MeV protons (~1.6×10^{10} /cm^{-2} 1 MeV neutron equivalent) to the CMOS detector IU233N5-Z, which is an optical sensor but also has X-ray sensitivity. Although the number of hot pixels was increased, We still observed line features of ^{241}Am source. We will present the performance comparison before/after the proton irradiation.

Submission declaration

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