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New concept of Si semiconductor Compton Camera

Compton camera is a sensitive imaging detector for soft gamma-rays. So far, solid, liquid, and gas detector parts are used and developed. Reconstruction can not only give imaging but also remove background events to archive good sensitivity. However, the angular resolution is in principle limited to several degrees by Doppler broadening of atomic electrons. Here we propose a new concept of Compton camera using Si CMOS sensors to archive less than 1 degree angular resolution. We performed a Monte-Carlo simulation and confirmed the detector concept.

Submission declaration

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