

# **Development of a CdTe detector plane for gamma-ray burst detection in the X-ray band (<100 keV)**

**D. Barret** (1), M. Ehanno (1), R. Pons (1), O. Gevin (2), O. Limousin (2), F. Lugiez (2), A. Penquer (3), A. Bardoux (3)

(1) CESR, (2) CEA/DSM/DAPNIA, (3) CNES

We report on the development of an innovative CdTe detector plane (DPIX) optimized for the detection and localisation of gamma-ray bursts in the X-ray band (below 100 keV). DPIX is part of an R&D program funded by the French Space Agency (CNES). DPIX builds upon the heritage of the ISGRI instrument, currently operating with great success on the ESA INTEGRAL mission. DPIX is an assembly of 200 elementary modules (XRDPIX) equipped with 32 CdTe Schottky detectors (4x4 mm<sup>2</sup>, 1 mm thickness) produced by ACORAD Co. LTD. in Japan. Each XRDPIX is readout by the very low noise front-end electronics chip IDeF-X, currently under development at CEA/DSM/DAPNIA. In this paper, we will describe the main features of the IDeF-X chip, and will present preliminary results of the reading out of one CdTe Schottky detector by the IDeF-X V1.0 chip. A low-energy threshold around 2 keV has been achieved. This is to be compared with the ~12-15 keV threshold of the ISGRI-INTEGRAL and BAT-SWIFT instruments. We will conclude this paper by presenting the next development phase, which will take us to the hybridization of an XRDPIX.