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#11-171 Novel modular X-ray detection system based on Silicon Drift Detector

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A new X-ray detection system composed of an arrays of multichannel Silicon Drift Detectors (SDDs) is presented. This custom-designed multilayer can be adapted to the required geometry and caracteristics. The presented layout is composed by a 8 monolithic array of SDD each with 8 cells with a total area of 570 mm^2, ultra-low noise front-end electronics, integrated dedicated acquisition system and software, digital filtering, control and stabilization of the temperature. This 64-channel integrated detection system is optimized to work in an energy range of 3-30 keV. It allows a count-rate of 15.5 Mcount/s and an energy resolution below 170 eV FWHM at the Mn 5.9 keV Kα line at room temperature.

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