THE AUGER FLUORESCENCE DETECTOR ELECTRONICS

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The Fluorescence Detector of Auger consists of 30 telescopes covering a field of $30^o \times 30^o$ each with 440 PMTs. The high dynamic range of signals (15 bit) is managed by an active voltage divider at the PMTs, amplifiers with programmable gain and data conversion in a high and a low gain range. The DC-level of the night-sky background can be monitored by a built-in opto coupled linear circuit or by analysis of the fluctuation of the background signal. The signal of the PMTs is sampled at a rate of 10 MHz with 12 bit resolution. A sum channel with lower gain records the high pulse contributions. A 3-level trigger system uses hardware pattern recognition to reduce the 10 MHz per pixel rate (13 200 pixel) to 0.02/s random events per 6 telescopes. The fast read-out is achieved by a PC-based LINUX system optimized for long lifetime. The design and performance of the electronics and trigger is presented together with first results of measurements.