

Yu Kai

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🏛️ USTC (MS in Astronomy)

Projects

Research on readout electronics methods for CsI crystal arrays based on SiPM arrays.(2024-4 to Present)

[See more](#) 

- Designed frontend circuits including operational amplifiers, ADC sampling, and et al. (to amplify weak analog signals and convert them to digital signals.)
- Developed a multiplexed resistor-encoded network circuit.(to encode signals using analog circuitry, reducing the number of readout channels.)
- Designed PC software in LabWindows/CVI to provide an interactive data processing interface (C programming).(for interactive data processing and display).

Developed a testing system for the LNGS.(2023-6 to 2024-4)

[See more](#) 

- Designed FPGA PCB backplane, differential signal conversion circuits, serial and USB transmission circuits (hardware design).
- Developed internal FPGA logic to implement functions like timing control, error checking, and data transmission (FPGA programming).
- Designed PC software in LabWindows/CVI to provide an interactive control interface (C programming).

Skills

Proficient in digital and analog circuit design.

Program languages:


Hardware languages CHISEL, Verilog

Software languages C, Scala

English Proficiency: TOFEL (87/120) ,CET6

PCB design software: Altium Design, JLC EDA, LTSPICE

Publications

Design and Realization of the Test System for Chang'e-7 Lunar Neutron Gamma Spectrometer 

Reviewing

Yu Kai, Zunlei XU ,Yongqiang ZHANG,et al

Performance Comparison of SiPM Arrays Using DPC and SDC Methods at the Same Channel Reduction Rate 

In Prep

Yu Kai, Zunlei XU ,Yongqiang ZHANG,et al