

The development of Delay Cable-Free signal readout circuit (#9)

Thursday, 14 March 2024 13:50 (10 minutes)

“ADC is commonly used in the nuclear and elementary particle fields as a method of measuring electric charge. The conventional method for obtaining charge information is to digitize the analog signal from the detector by integrating the electric charge.

Therefore, existing data acquisition systems need a trigger system, which causes a dead time, as well as a delay of the analog signal by coaxial cable.

Therefore, we aim to obtain wave height information using a waveform digitizer. In this method, it is difficult to obtain wave height information from a large number of detectors using high frequencies and with a large number of bits due to data volume and cost.

Therefore, it is difficult to obtain high energy resolution. However, it has been found that the use of a filter circuit inside the circuit can prevent deterioration of resolution.

In this presentation, we report on the performance of an evaluation board that combines a filter circuit and a flash ADC (FADC), which is a waveform digitizer type ADC, aiming at an QDC that does not require a delay cable.”

Presenter: KOJIMA, Ginga (ELPH, Tohoku University)

Session Classification: Poster