

## Waveform analyzing of scintillator output

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**Abstract.** Scintillation counters are used as main detectors in many of the cosmic ray air shower arrays. The pulse high of a scintillation's output is usually converted into digital data in order to calculate shower parameters, but all other characteristics of the output are neglected. However, much more information about the shower should be carried by the waveform parameters of the scintillator's output. In Zhengzhou Air Shower Array, we use a set of waveform analyzer to record and analyze the waveform of scintillator's output. By

analyzing the rise time, pulse high, width and some other waveform parameters of scintillator's output, we get the information about shower particles. Single, double and multiple particles have different waveform respectively. Furthermore, some unusual waveform with very complicated structure is obtained. The results are presented and compared with that from the conventional work.

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