

Abstract Submitted  
for the HAW09 Meeting of  
The American Physical Society

**New method of digital waveform analysis of signals from segmented Ge detectors** SHINTARO GO, SUSUMU SHIMOURA, EIJI IDEGUCHI, SHINSUKE OTA, HIROYUKI MIYA, Center for Nuclear Study(CNS), The University of Tokyo — We study digitized waveforms ( $f(t_i)$ ) from a segmented Ge detector in CNS GRAPE [1], by means of  $n$ -th “moments”,  $\sum_i t^n f(t_i) / \sum_i f(t_i)$ . Nine sets of digitized data of the signal from  $3 \times 3$  cathodes were recorded by using ADC with 105 MHz sampling [2]. The purpose of the present study is deducing essential information from about 1K-byte waveform data with a simple algorithm to determine the interaction position of  $\gamma$ -ray. The moments from  $n = 0$  to 3 are examined. The characteristics of the moments will be discussed as a function of the hit position. In the preliminary analysis, it shows that the root-mean-square ( $n=2$ ) and the skewness ( $n=3$ ) vary in wide ranges with changing the hit position.

[1] S.Shimoura, Nucl. Inst. and Meth. A 525 (2004) 188.

[2] T.Fukuchi et al., CNS Annual Report 2006 (2006) 77.

Shintaro Go  
Center for Nuclear Study(CNS), The University of Tokyo

Date submitted: 01 Jul 2009

Electronic form version 1.4