DIGITAL READOUT OF PPC/BEGE DETECTORS

I. Introduction

1. Why do this,

2. high/low-energy channels concurrently,

3. maximize information transfer, (unshaped pulses)

4. background reduction, multi-site events, removing microphonics, etc.

5. deploy a MJ-like system to determine requirements

II. Requirements of a Digital DAQ system

1. Low-deadtime (biting into noise, maximize calibration livetime, etc.)

2. Amplification

3. Excellent energy resolution, bit depth

4. Many channel input

5. fast enough sampling to maximize background reduction, i.e. determining multi-site events (see later section)

6. Trace-length (long?)

7. Trigger requirements

8. Readout speed

III. Deployment of a Digital DAQ for PPC-II

A. Description of system

1. Description of deployed detector

2. Description of Gretina DAQ system, hardware, software

B Performance

1. Trigger efficiency

2. low-energy threshold

3. channel rates.

4. noise performance

5. DAQ performance

C Conclusions

1. Improved requirements on digitizer at low-energy

2.

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IV. Deployment of a Digital DAQ system for MALBEK/Soudan BeGe

(Choose one of the above, MALBEK or Soudan BeGe?)

A Description of system

1. SIS3302, improvements/differences in systems

B Performance

1. Trigger efficiency

2. low-energy threshold

3. channel rates.

4. noise performance

5. DAQ performance

C Conclusions

`. Was this system better than previous?