BACKGROUND REDUCTION WITH POINT-CONTACT P-TYPE

GERMANIUM DETECTORS

Testing digitization speed, theoretical results (chi-square study)

I Head-to-head comparison of digital DAQ systems

A. Test metric 208Tl DEP, background reduction.

B. Looks at high-energy performance of digitizers

C PNNL Test

1. Gretina vs. XIA DGF, Pixie 4-c

2. Description of test (event-by-event analysis)

3. description of synchronization of data

4. DGF-4c vs. Gretina

Conclusions, plots

5. Pixie-4c vs. Gretina

Conclusions, plots

SSTC analysis, 68Ge background reduction

4.2.1 Estimate of 68Ge surface production using PPC-II data

\_ Use PPC-II data to get an idea of how much Ge-68 exists at

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\_ equilibrium at sea-level

\_ Use 2-D ML \_ts

4.2.2 Construction of Likelihood function for SSTC

\_ Contruction of a 2-D likelihood function for SSTC

4.2.3 Application of analysis to PPC-II data

\_ Application of likelihood function to PPC-II data (high+low-energy)

\_ Conclusions, PPC-II data will be too hot at low-energy, can we still do this?

4.3 Slow pulses

\_ Introduction

\_ Evidence for,

\_ Measurement with a source (PNNL PPC-II?)

4.3.1 PPC-II vs. PPC-I

\_ Describe di\_erence, conclusions.

\_ Where do these pulses come from?

4.3.2 Slow pulse removal

\_ Rise-time determination for low-amplitude pulses