

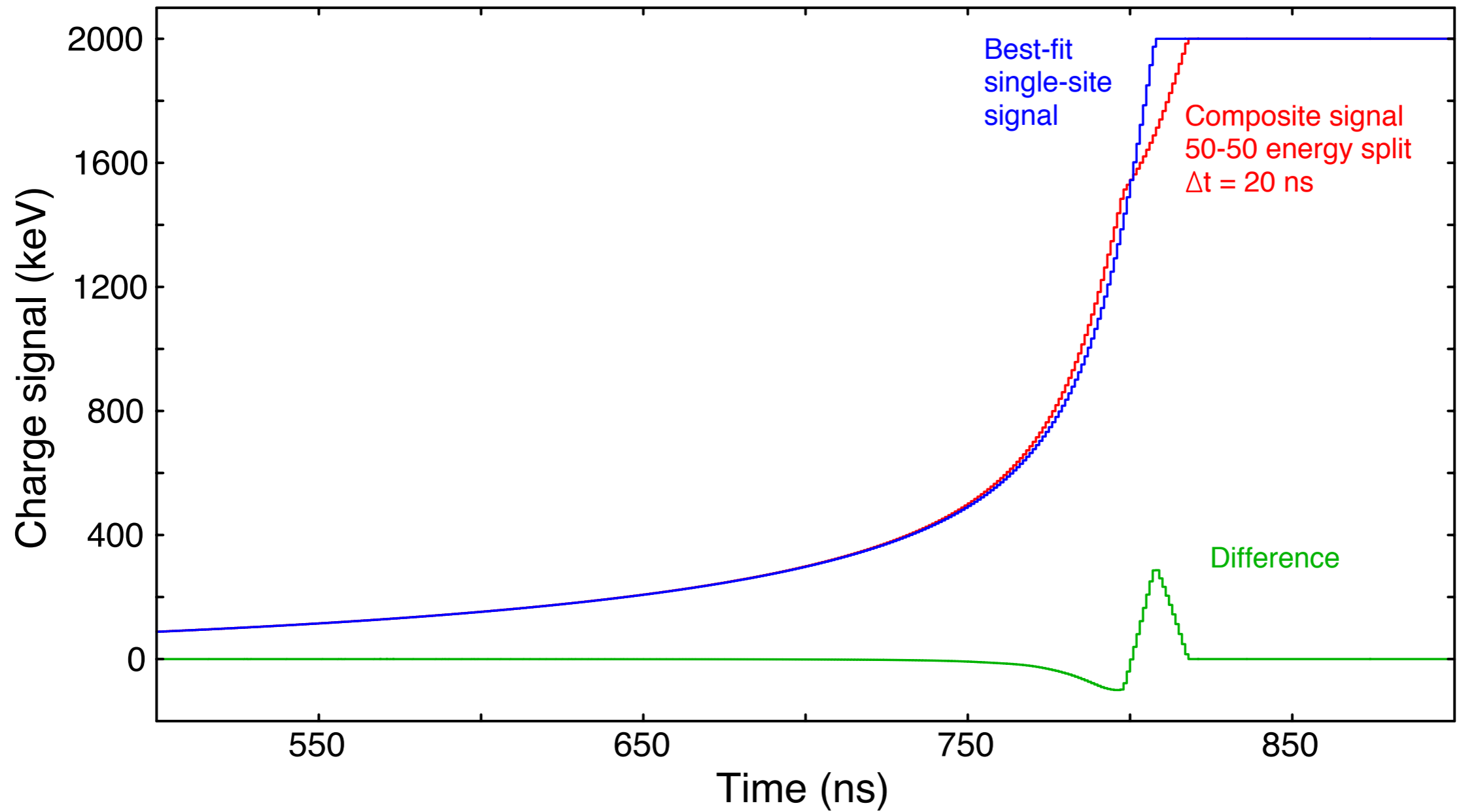
Digitization, Pulse Simulation

Michael Marino, David Radford, John Orrell
MaGe Meeting, München
18 Jan 2010

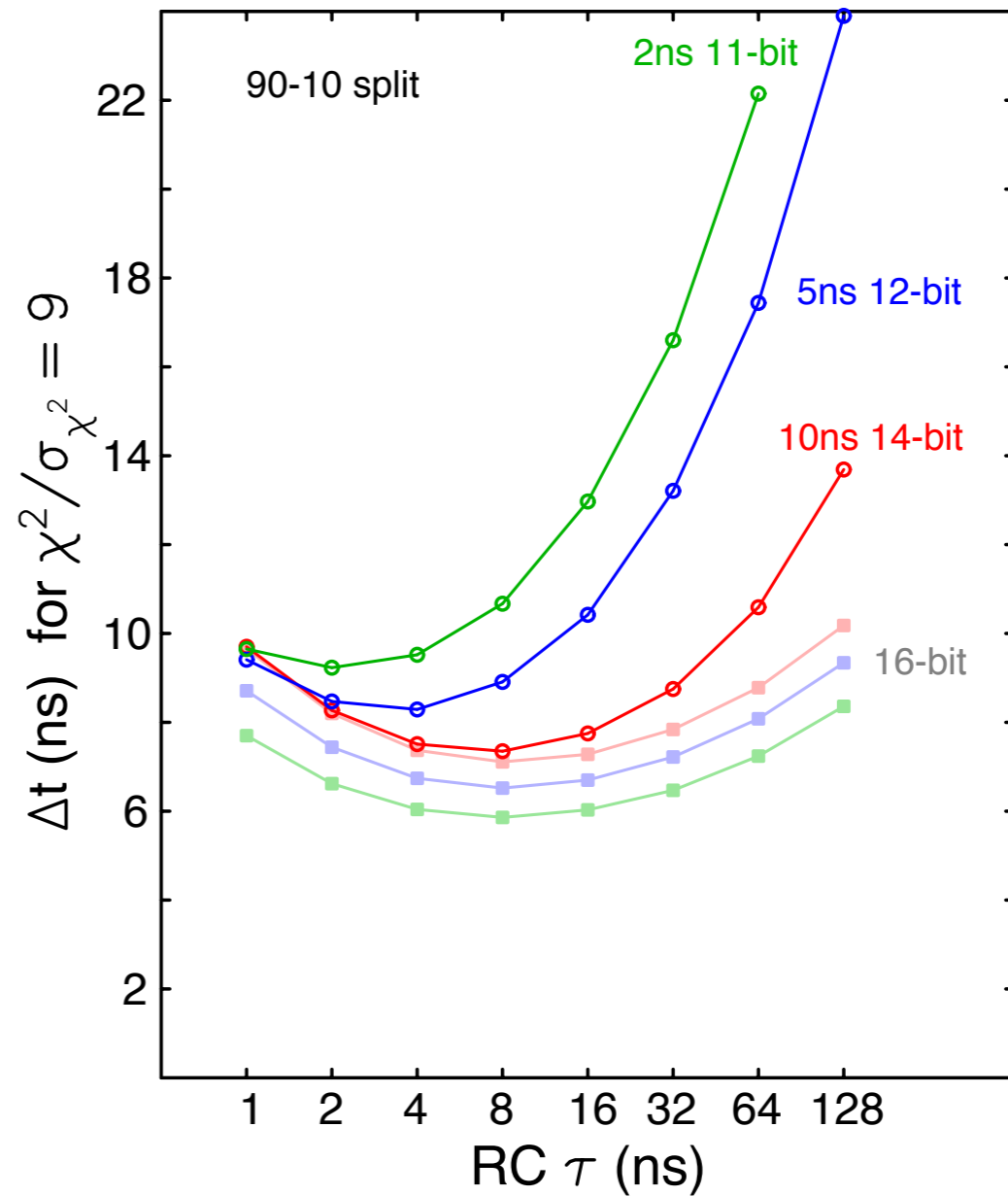
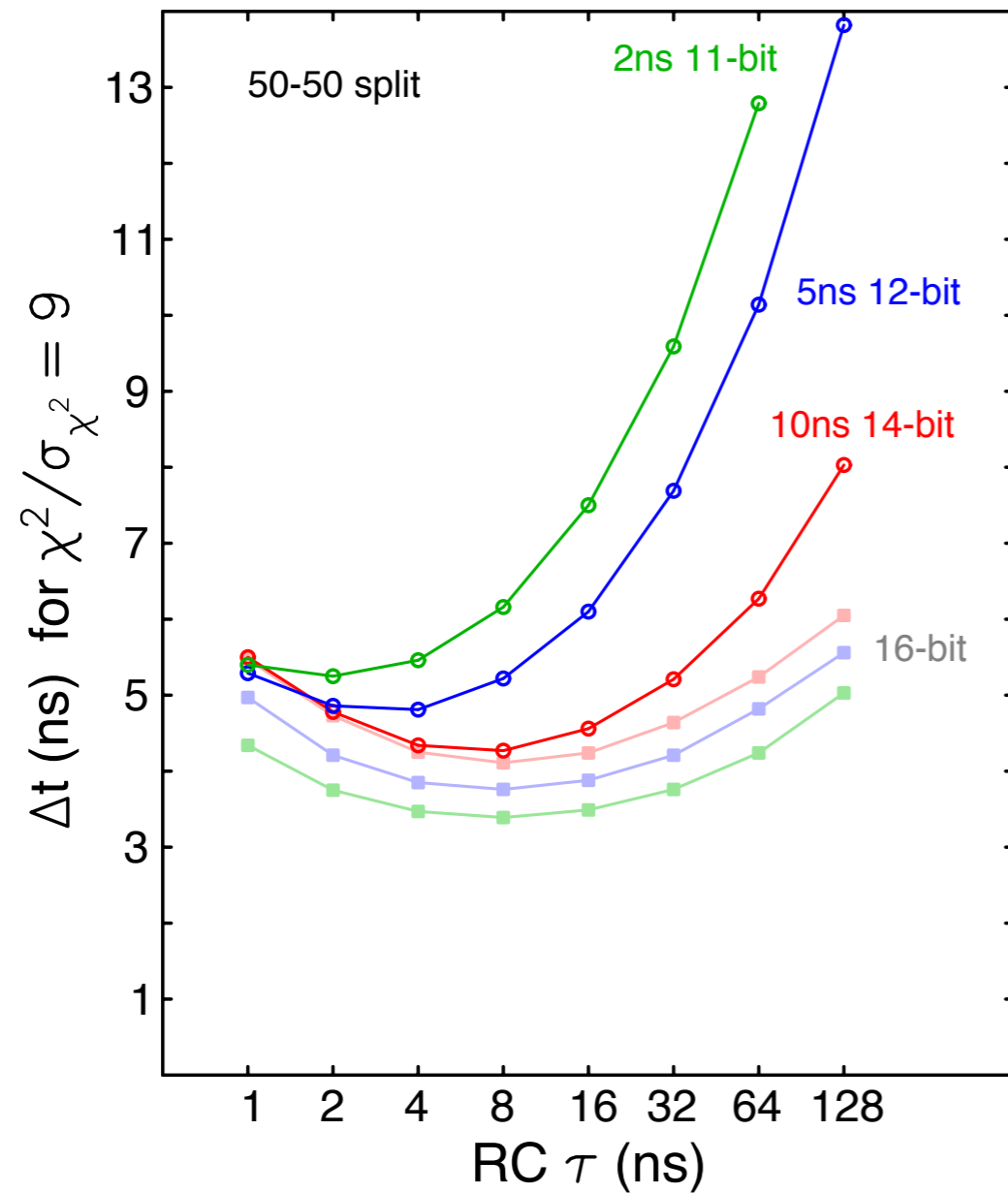
“Open” Issues

- Dynamic range (offset, amplification)
- Bandwidth/sampling speed (multi-site rejection)
- Pulse-reset preamps, AC-coupling
- 2 or more readout channels/xtal (low energy/high energy)?
- Analog pre-processing?

Simulation studies

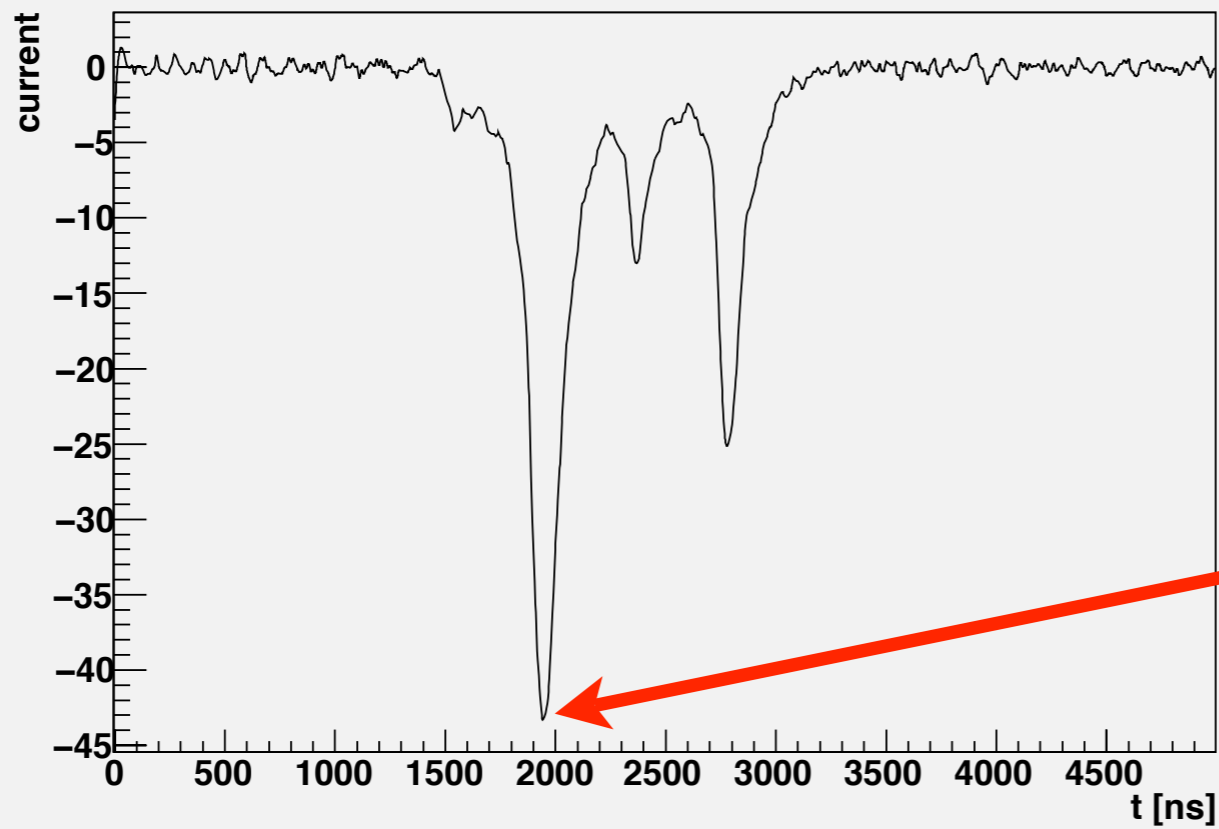


Simulation studies

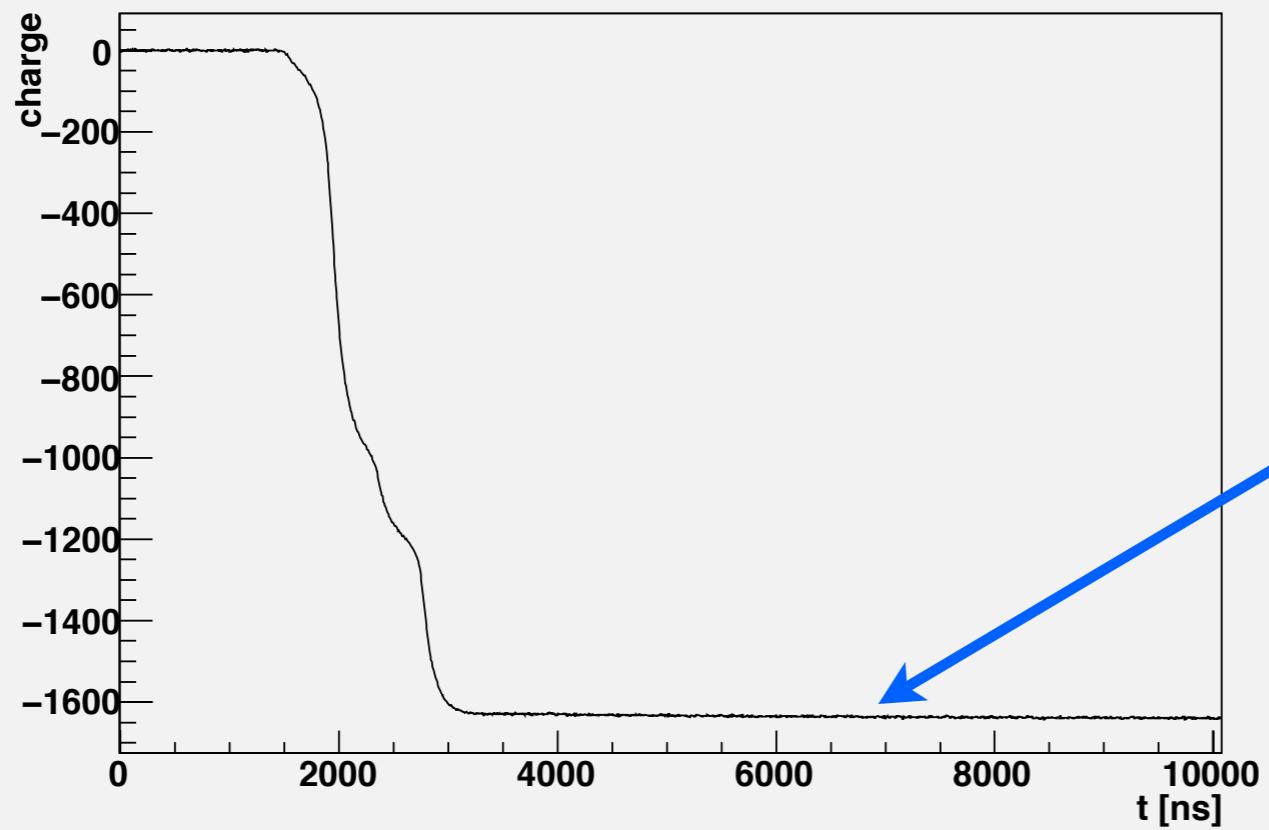
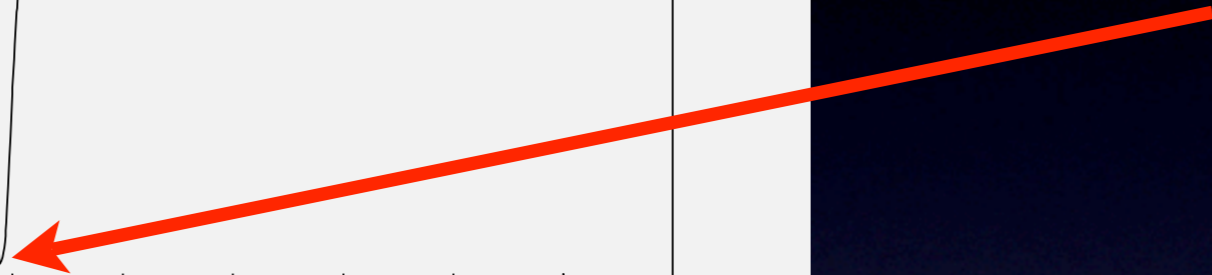


Data head-to-head comparison

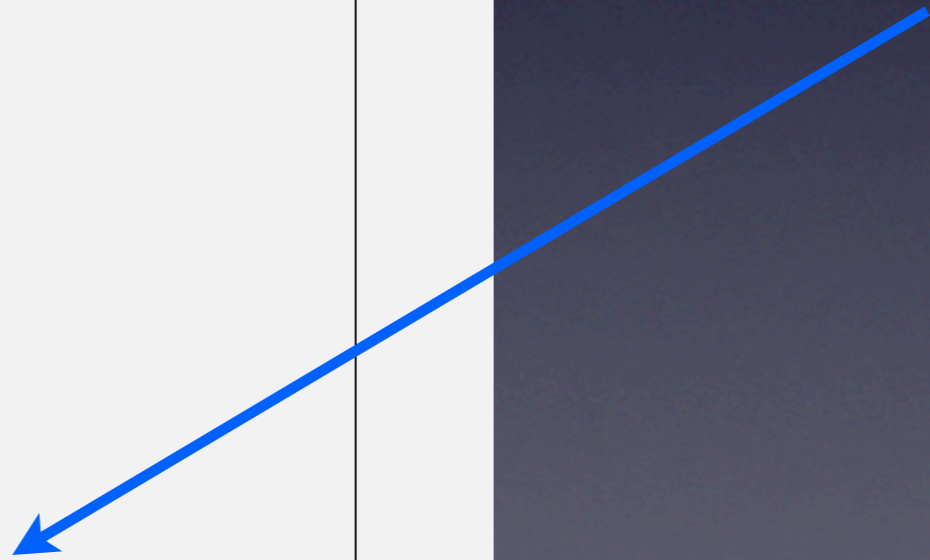
- PNNL P-PC detector, ^{232}Th Source
- XIA DGF-4c (40 Mhz) vs. Gretina (100 MHz)
- XIA Pixie-4c (75 Mhz) vs. Gretina
- Data synchronized, simple PSA applied



Max Current



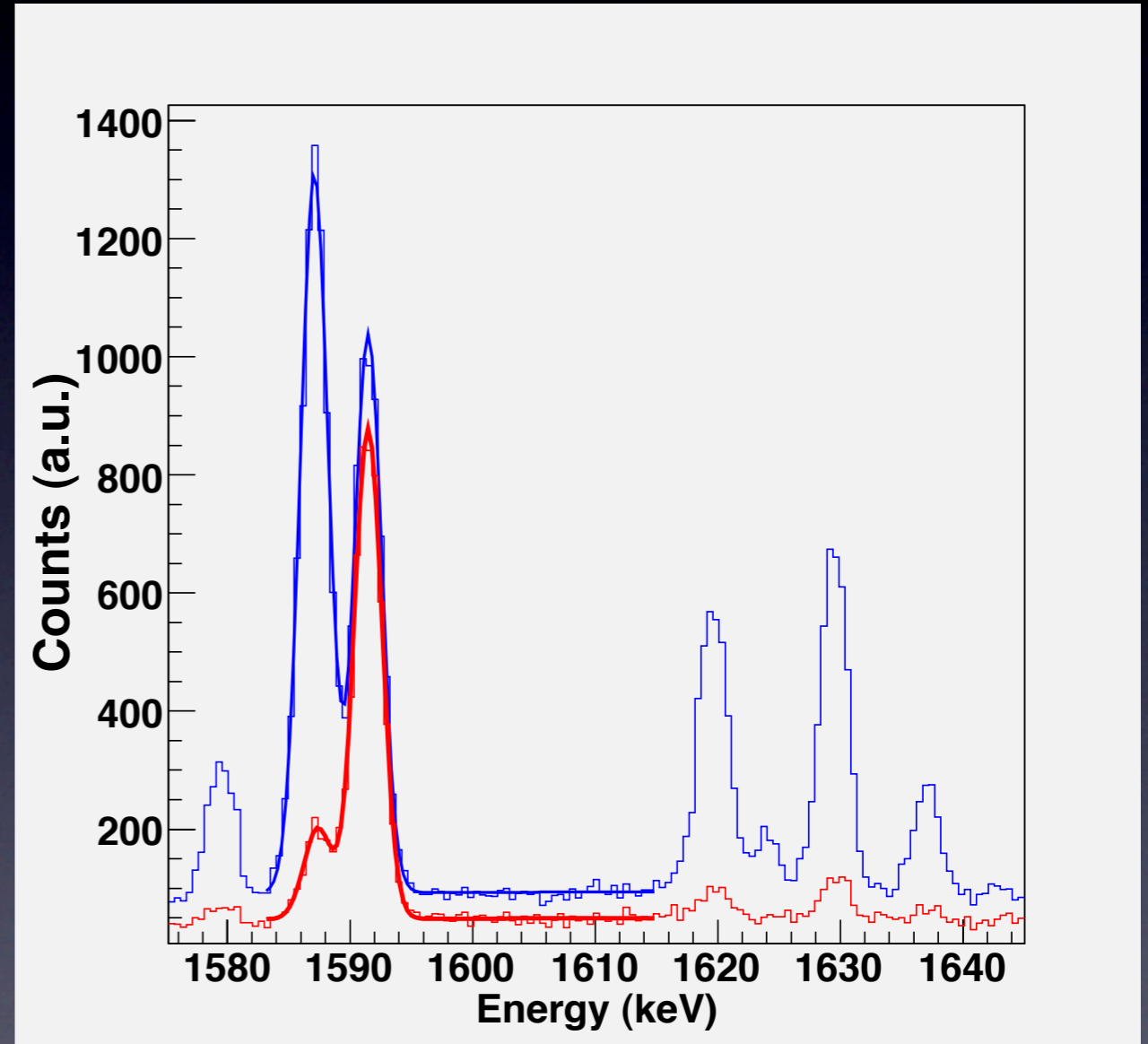
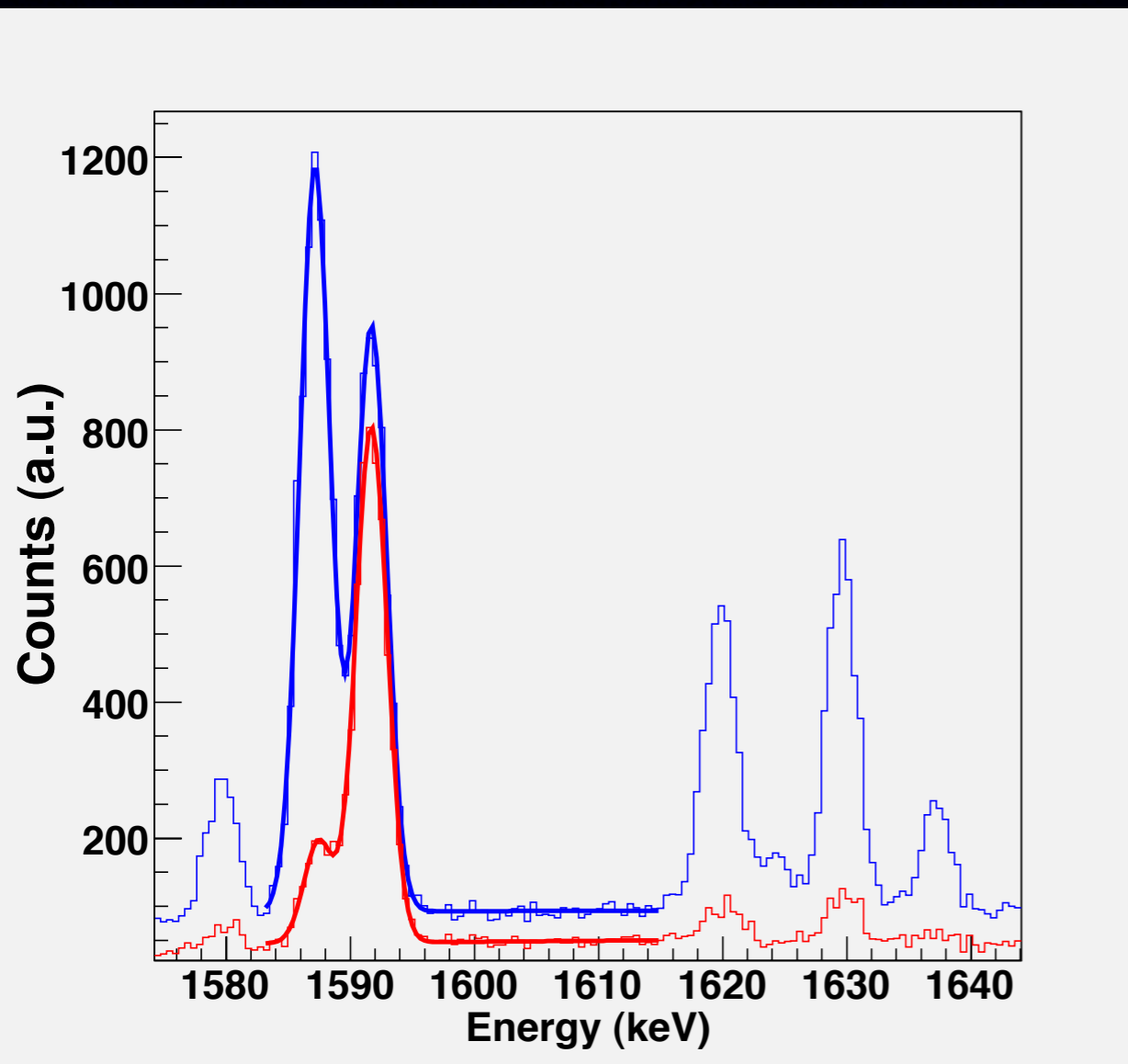
Energy



Results

DGF-4c

Gretina



SA: $90.0 \pm 3.2 \%$

BR: $85.8 \pm 1.3 \%$

SA: $90.0 \pm 3.1 \%$

BR: $86.5 \pm 1.2 \%$

Results (cont.)

