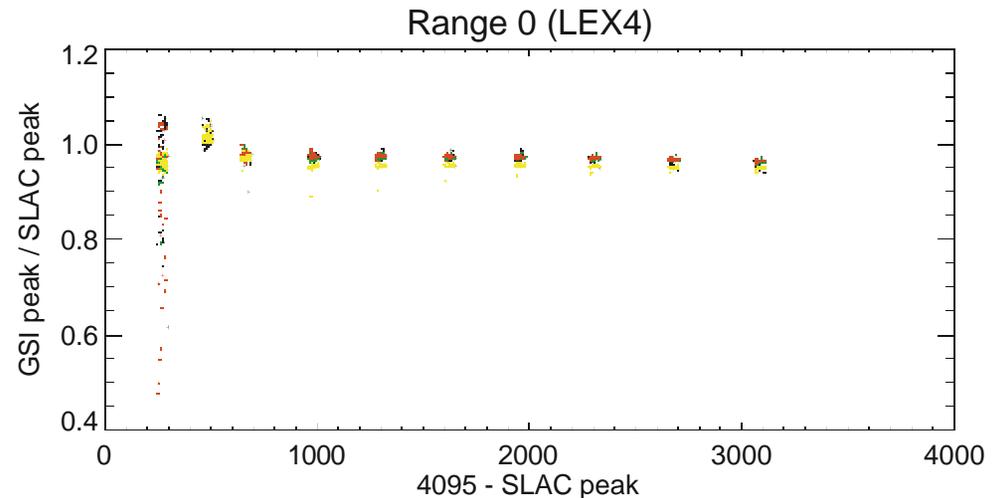
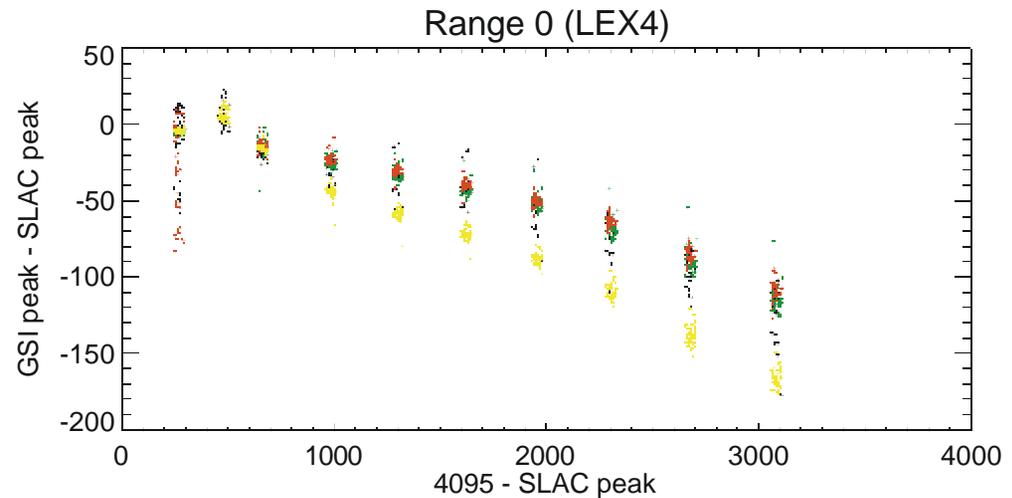


Intlin Calibration at GSI

- Comparing electronic calibrations at GSI and SLAC.
 - Figures show 160 log ends at 10 pulser amplitudes in LEX4 range.
 - Colors denote Front-End board.
 - Similar plots for all ranges.
- Conclusions
 - There was a general drift downward in gain of few percent in all ranges.
 - There were large changes in pedestal.
 - There were changes in integral nonlinearity ~5-10% in bottom of 10% of each range.
 - *But some channels show larger changes, and shapes will not be usable for SLAC.*

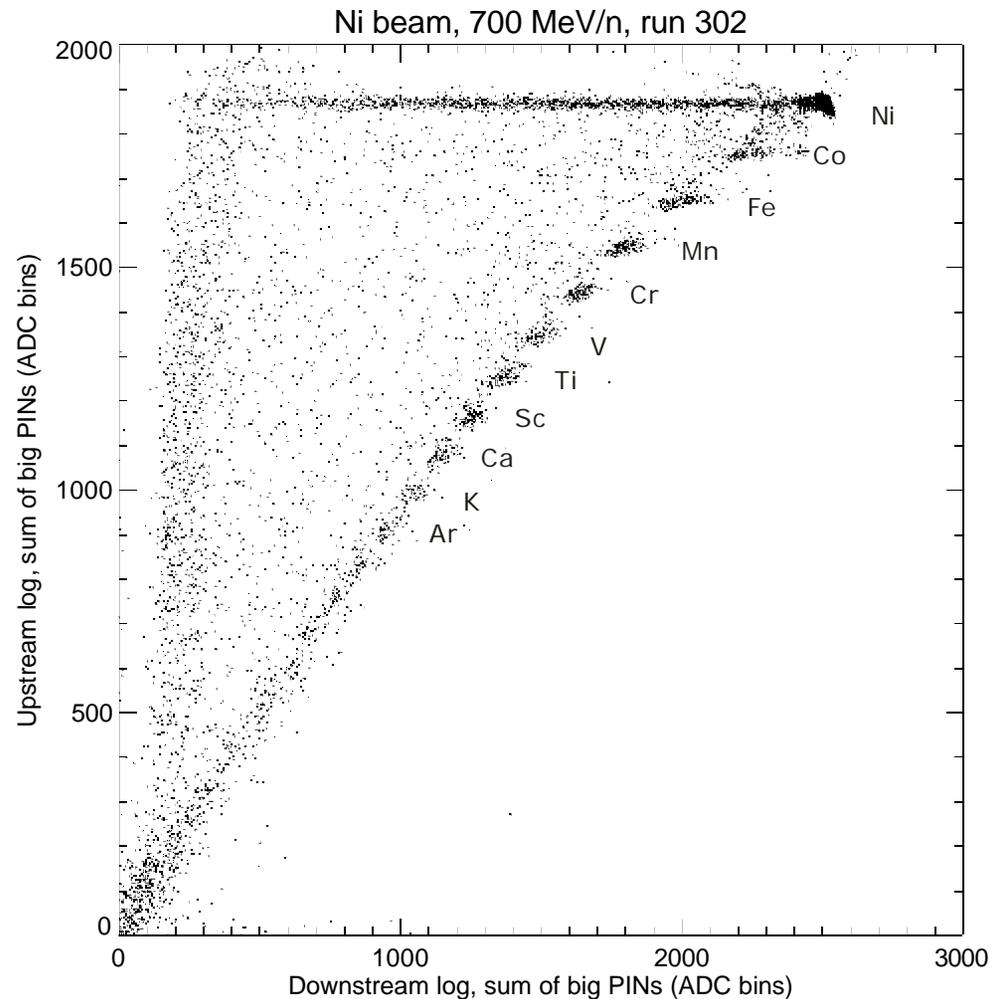


Any more bond degradation?

- **There have been no changes in optical quality of PIN bonds since SLAC.**
 - Muon peaks have not changed by more than 10% since return from SLAC.
 - Recall ~30 big PINs showed 50% decrease in muon peak, comparing pre-ship at NRL to arrival at SLAC.
 - The degradation appears to be infantile failure. This is consistent with our observations on the test bench, before the final crystal wrapping. Although optical performance is degraded, there is no loss in mechanical strength of bond. In fact, they're awfully hard to remove!
- **The bonds appear to be stable.**

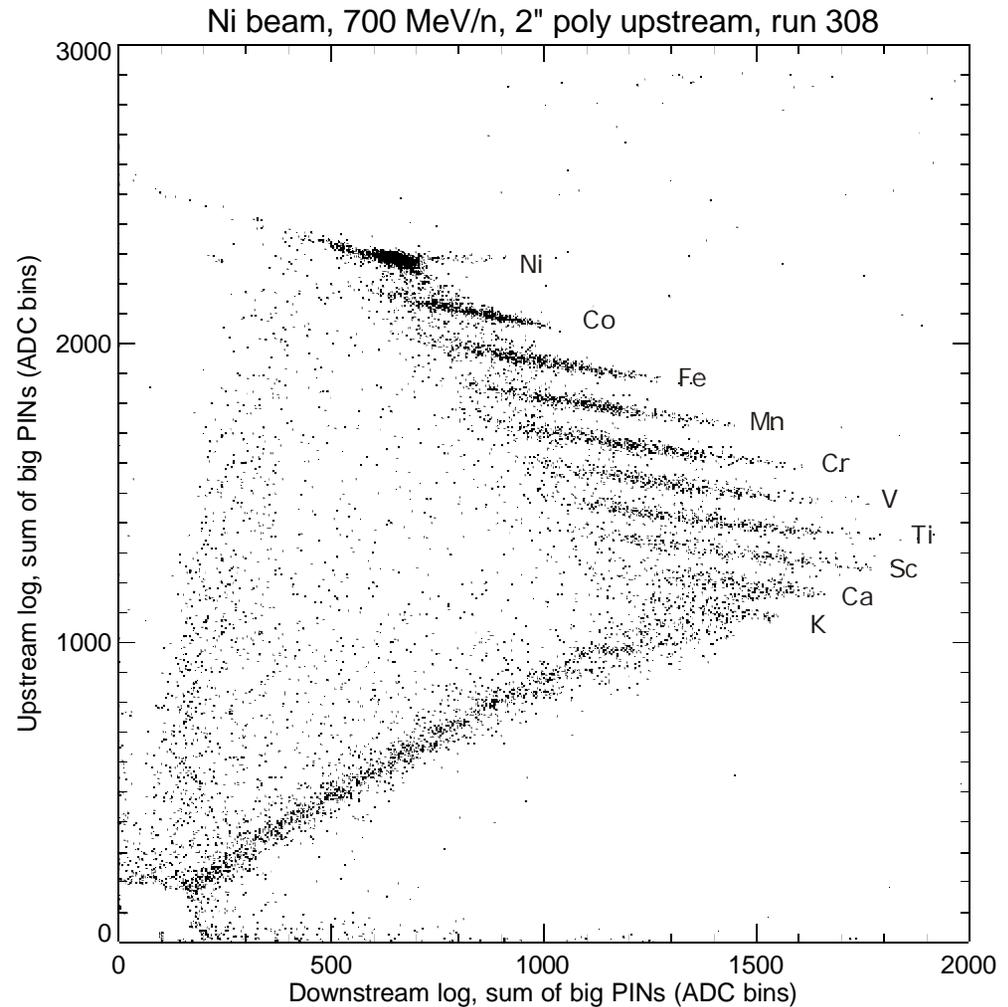
Ni beam at GSI

- Ni beam into test box
 - Test box xtals are 37 cm, dual PIN with Sylgard bond.
 - Fragments are created in beam monitor
 - 1 cm plastic paddle upstream
 - At this energy, all species penetrate both CsI layers, but there is slowing down (note downstream signal is bigger than upstream).
 - Similar plot for C and daughters.
- **Charges are easy to identify.**



Ni beam at GSI

- Same Ni beam, same crystals, but added material upstream
 - 2" polyethylene slows down primary beam and creates fragments with varying energies (from varying depths of creation).
 - Ni through Ti stop in second CsI layer.
 - Sc and smaller penetrate second CsI layer.
- Demonstrates that identifying charges in CsI is quite simple, even in the presence of a spectrum of incident energies.



8/11/00

Let's begin modeling

- Algorithms for dE/dx (ionization energy loss) and nuclear interactions.
 - dE/dx calculator extracted from CREME96 code.
 - Partial cross sections from Silberberg and Tsao, with modifications from Barghouti.
- Toy calculation shown at right:
 - Ni through Si (various tracks) at a range of energies (color coding) incident on two layers of CsI.
 - OK, we chose the wrong energies (i.e. the wrong thickness of poly block), but the general trends are there, including the V-shape for partly-stopping/partly-penetrating species.

