(Very Minor) Changes to Source Calibration Fitting Code

Chris West

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The high-sigGain quality cut

• In addition to calculating digi corrections, the program Gain2Digi makes quality cuts on the source calibration data.

• One cut (the high-sigGain cut) requires that the error on the gain must be $< 1$ ADC count/MeV.

• In every run, 5-30 crystals fail this cut almost randomly, but can usually be fit successfully, with nearly identical fitted parameters, with a different choice of initial guesses for the background parameters. See Johannes Bauer’s August 9th talk for details.
The fix

- The problem seems to be purely a fitting artifact.
- For crystals that fail the high-sigGain cut, we turn on the Minuit “improve” and “minos” flags and refit. Nothing else is changed.
- Surprisingly, this alone eliminates all of the high-sigGain errors.
Run 322 with and without fitting changes

pass/fail vs hardware: -1 = fail gain2digi_0322.root  1 = fail gain2digi_0322mod.root    0 = pass both
Gain shift differences

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