

# CalRecon and Digi Ideal Calibration Mode

Taken from .../CalXtalResponse/xml/idealCalib\_flight.xml in CVS (HEAD as of 11 April 2005):

Ideal mode calibrations are based on measured means of Cal Flight Models.

They are not well suited to real data as they treat all crystals as equal, while the varying pedestals in real data could cause some ideal calibrations to be out of range.

'Flight' ideal mode calibrations are intended for simulating flight energy levels.

The effective reponse of the current configuration is as follows

NEWIDEAL\_FLIGHT2

| RANGE | MeV/ADC | MAX_ADC(above ped) | SATURATION(MEV) | PED(ADC) | NOISE(ADC,MeV) | LAC(ADC,MeV) |
|-------|---------|--------------------|-----------------|----------|----------------|--------------|
| LEX8  | 0.03    | 3550               | 109             | 510      | 6.0, 0.18      | 43, 1.29     |
| LEX1  | 0.27    | 3850               | 941             | 210      | 0.6, 0.162     |              |
| HEX8  | 2.16    | 3550               | 7676            | 510      | 6.0, 8.823     |              |
| HEX1  | 19.23   | 3850               | 74016           | 210      | 2.1, 32.30     |              |

It incorporates the following improvements over the previous version.

- HE gain setting is set to maximum energy range, raising single xtal saturation level.
- ULD values for all ranges and HEX1 saturation level are set to very close to 4095. The previous values were lower in an effort to avoid problems caused by channels w/ higher pedestals which is not an issue in ideal mode
- LAC threshold was raised to 1.3 MeV which is closer to the mean LAC threshold used for flight crystals
- pedestal noise levels are lower to better reflect the true behavior of the flight front-ends
- some values were rounded a bit just to make things simpler.