New CAL pedestal and MeV per DAC calibration files

The new CAL pedestals calibration file based on nomSciOps run 245129872 collected on Oct 8, 2008 is available at:

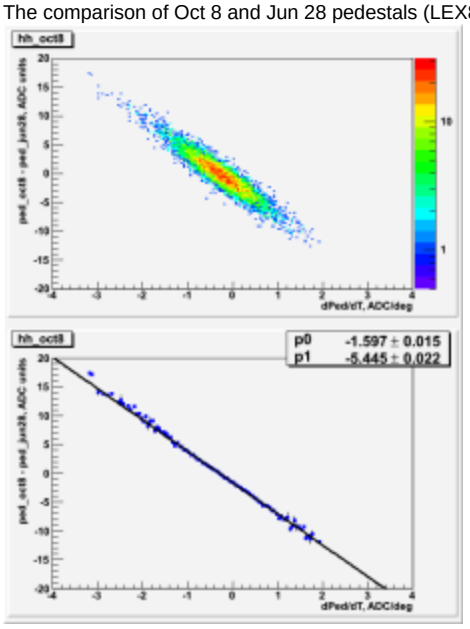
/nfs/slac/g/svac/chehtman/calibGenCAL_analysis/flight/ped/calPed_8oct08_3utc37_run245129872.xml

The new MeV per DAC calibration file based on 107 nomSciOps runs 244137831 - 244733848 collected during the week Sep 26 - Oct 3, 2008 is available at:

/nfs/slac/g/svac/chehtman/calibGenCAL_analysis/flight/fit_protonCalib_nomSciOps_week26sep3oct2008_sum_try2.calMPD.xml

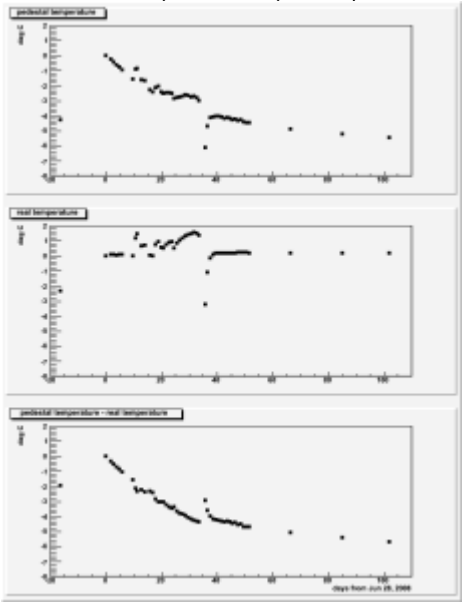
These files are proposed to replace the June 28 pedestal calibration file and pre-launch MeV per DAC calibration file used so far for offline data reconstruction in the pipeline.

The comparison of Oct 8 and Jun 28 pedestals (LEX8 and HEX8 ranges) is shown on the following plot:



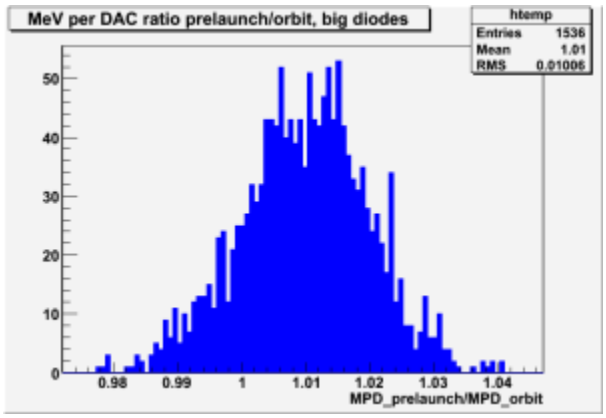
The pedestal drift with respect to currently used calibration is rather significant (between -12 and +18 ADC units), this confirms the need to switch to the recent file.

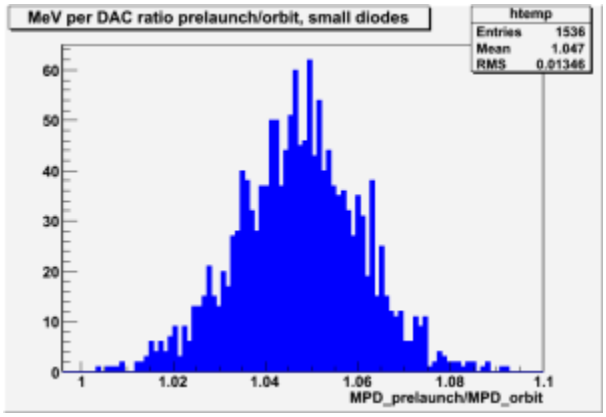
The time evolution (since launch) of the "pedestal temperature" defined by the slope of the above corellation is shown on the following set of plots:



While the non-thermal drift of pedestals is not yet understood, it is still going on at the rate ~0.5 degrees (equivalent temperatute change) per month, so we have to update our pedestals every 2 months.

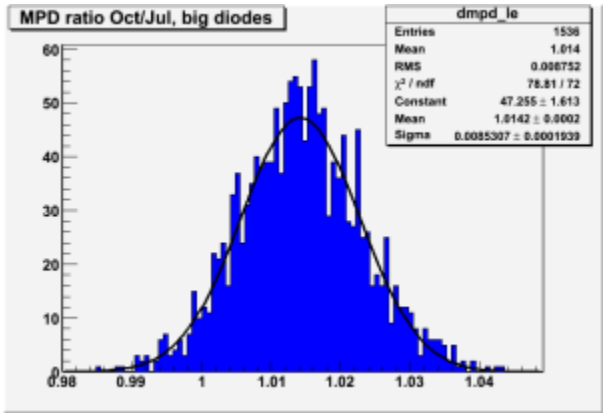
The difference between July on-orbit MPD calibration and prelaunch calibration is show at the following two plots:

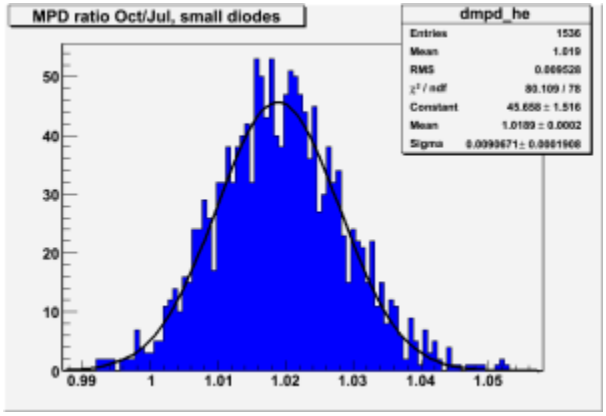




SO, pre-launch MPD coefficients are bigger than the on-orbit ones and now (using pre-launch MPD coefficients) the reconstructed CAL energy is overestimated, especially for small diodes.

The difference between October and July on-orbit calibrations is shown on the two following plots:





The change in MPD calibration over 3 month is not big ~1.5-2.0% and goes in opposite direction - closer to pre-launch calibration.
Anyhow for consistency it is suggested to use the new MPD calibration file.