E36Monitor macro users manual

The goal of this code is to monitor the target/SFT data for;

adc gain shifts,
tdc timing shifts,
count rate shifts,
dead bars/fibres,
kaon beam position shifts,
others to follow as more data types become available.

It issues warnings if changes are outside the parameters below. To accomplish this it **compares** two runs and issues these warnings in an output file. There are limit numbers for the decisions as to whether a significant change has occurred. These are loaded from the Limits.dat file in the Results/ subdirectory. It contains values for both the target and for the SFT. They are:

MaxAdcShift - If ADC mean shifts (+/-) more raise warning.
MaxTdcShift -If TDC mean shifts (+/-) more raise warning.
MaxRateShift - If Bar count rate shifts (+/-) more raise warning.
MinHits - bar/fibre histoed in the missing bars/fibres histogram if nhits not greater than this number. {MissingBars & MissingFibres}
DeadBarIfLess - If counts are less declare bar/sft dead and raise warning.
MaxBeamShift – If Kaon beam x or y position shifts (+/-) more raise warning

First load the macro

root> .L E36Monitor.C+

Note that this code (in most cases) expects that the Pedestals routine has been run and that the pedestal file(s) are available for the run(s) in question.

Issue the following commands:

QuickLook(*runnum*)

This will generate a set of histograms for a quick by eye look at the quality of the data in the run in question. Uses hard wired crude Pedestals so can be run without running the pedestals finding routine. The results are likely very similar to the Tree2Histos routine but not in the large canvas format.

IdealRun(*runnum*)

This generates a file IdealRunvalues****.dat (in Results subdirectory) that contains the "ideal" values of various parameters (for example tdc peak positions, adc peak positions, etc) to which those parameters in future runs will be compared.

CompareRuns(*runnum1, runnum2*)

This loads the ideal values generated above for runnum1 and analyses runnum2 in order to find out what if anything has changed. A report is generated as TargetSFTWarnings****.dat in the Results subdirectory.

DataCompare(*runnum1, runnum2*)

This is to compare two runs directly, without having generated an ideal run values file for either one. Thus it will analyse the 1st run and then the 2nd run and then calculate the differences and output the warnings file. Again the absolute value of the differences are used to determine if a warning is to be issued (in the name of *runnum2*).