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AMORE User's Guide

Here you can find the TOF AMORE User's Guide. Hope it helps.

• amoreTOFguide.pdf: TOF AMORE User's Guide
TOF Monitoring Application Software

Monitoring at P2 is available on a set of machines devoted to DQM. Among all DQM machines one has been assigned for TOF online data quality monitoring:

aldaqdqm06.

Unfortunately, because of network security at P2, some firewall rules prevent connections on that machine from outside. Therefore the only way to perform data quality monitoring is to sit it front of one of the PCs in the ALICE control room. From one of those machines it is possible to log into the DQM machines. Then, what you should first do if you would like to look at TOF online histograms (ie. with MOOD) is to connect to aldaqdqm06 (actually you could even use another DQM machine, but, please, use that one)

# ssh tof@aldaqdqm06

using the common TOF DAQ password (if you don't know it ask someone who knows it).

MOOD

Once you got logged into a DQM machine you can start looking at the TOF online histograms provided by MOOD. These are the following:

1. DRM and TRM counters;
2. Crate and TRM hit multiplicity;
3. Crate and TRM channel map;
4. Crate and TRM time spectra;
5. Crate and TRM TOT spectra.

Getting started with MOOD

To start MOOD just write

# mood

at the prompt. In a couple of seconds the MOOD mainframe will appear.
To actually start a TOF-MOOD module you have to select a TOF module from the menu Detector. Currently there is only one module for TOF in MOOD (and very likely there will be only one also in future). The name of that module could change with time (currently it is Cosmic run 2007).
One the TOF-MOOD module has been loaded in memory the MOOD mainframe will change into the TOF-MOOD mainframe. This may look similar to the following screenshot.
MOOD monitoring configuration

It is now time to setup MOOD in order to monitor TOF raw data. The must important thing is to tell MOOD which is the data source which has to be monitored. It can be both a file (offline monitoring) or a DAQ machine (online monitoring). To setup the monitoring source just click on the **Setup Monitor** button and a little frame will appear.
Inside **DATE Monitor Configuration** frame you have to specify the **Monitoring Source** according to the monitoring source syntax. Since you won't ever look at other detector's data with MOOD you can easily setup the monitor data source just using one of the following **TOF Monitoring Sources**:

1. `@ldc-TOF-A00-A05-0:` (for A-side sectors from 00 to 05)
2. `@ldc-TOF-A06-A11-0:` (for A-side sectors from 06 to 11)
3. `@ldc-TOF-A12-A17-0:` (for A-side sectors from 12 to 17)
4. `@ldc-TOF-C00-C05-0:` (for C-side sectors from 00 to 05)
5. `@ldc-TOF-C06-C11-0:` (for C-side sectors from 06 to 11)
6. `@ldc-TOF-C12-C17-0:` (for C-side sectors from 12 to 17)
7. `@gdc-edaldaqpc032:` (for all TOF)

These are the **Role Names** of the LDCs assigned for TOF. Using one of those **Monitoring Sources** you connect the corresponding LDC to monitor its data in online mode. You have to keep in mind that if you monitor data from one LDC you cannot see any data of sectors which are actually readout by another LDC. In fact it is not possible to use mood to monitor whole TOF on a LDC level with only one MOOD instance. If you need/want to do that (monitoring whole TOF on LDC level) you have to start 6 MOOD processes.

An easy solution for the previous problem (monitoring whole TOF) is to monitor TOF data on a GDC level. This can be done setting up the **Monitoring Source** in order to monitor GDC data. Unfortunately it is not possible to predict which GDC are currently there when a run is going on, therefore you may have to ask.
DAQ/ECS people which GDCs are there (and select one which has been enabled for monitoring). There is one GDC which is assigned for TOF. This is aldaqpc032. In any case, while monitoring on GDC level you will certainly loose events because not all events are put together by the same GDC. The syntax to monitor at GDC level is the same as LDC:

@gdc-aldaqpc032:

that is, @roename@:

There is actually another way to monitor whole TOF data. This uses the Monitor By Detector capability of the monitoring library. I didn't actually try that feature, but you may try to ask DAQ/ECS for the sintax if you will need that.

If you need to monitor data which are stored in a file (ie. on aldaqdqm06) you just have to put the correct pathname as the Monitoring Source. You can use the button which is located to the right of the Monitoring Source filed to browse the hard disk and search the file.

One you are done with Monitoring Source Configuration just press OK.

**Setting up and starting monitoring loop**

If you are here very likely you succeeded in configuring your MOOD. Very good! The next step is to setup and start the Monitoring Loop which actually monitors the data and fills the histograms.

To setup the Monitoring Loop you have two fields:

1. Maximum number of events;
2. Update period.
The meaning of these two fields will be even more clear soon, but let me tell you this:

- **Maximum number of events** is the maximum number of events which will be monitored. When you start the **Monitoring Loop** it will continue monitoring up to **Maximum number of events**. Then it stops. You need to make the **Monitoring Loop** an endless loop you just have to put **ZERO** as **Maximum number of events**.

- **Update period** is the number of events between each histogram update. The histograms get updated only after **Update period** events from the start of the **Monitoring Loop**. Do not set a little number if it is not really needed and keep in mind that, more or less, to update the histograms it will take about one second. Therefore if the DAQ is running at 1000 kH and you are monitoring with an **Update period** of 100 events you will monitor events at 100kH maximum.

To control the **Monitoring Loop** there are a few buttons
1. **REWIND** this works in offline mode if you need to rewind your file.
   2. **RESET** this resets all histograms to empty histograms
   3. **GET EVENT** this gets and monitors one event only.
   4. **START EVENT LOOP** this starts monitor event loop. It stops automatically after **Max number of events**.
   5. **UPDATE** this will manually update the histograms. Normally histograms get updated after **Update period** events.
   6. **STOP EVENT LOOP** this stops the monitor event loop.

I think there is not much to say about that. This is part of the common framework of MOOD. Now I'll focus on the custom features of MOOD-TOF module.

**MOOD-TOF online histograms**

As it has already been mentioned MOOD-TOF module provides a set of online histograms. These range from DRM and TRM counters to Crate and TRM time and TOT spectra. In any case the meaning of those histograms is quite trivial... To access one set of histograms you have to use the **TOF Tab Bar**.

UPDATE: a new tab has been added to the **TOF Tab Bar**, namely **Globals**. It contains global histograms. Right now only one histogram is provided. This histogram maps all TOF FEAs and show the number of hits.
in each FEA.

Selecting one of the histogram sets (left click with the mouse on the corresponding tab) the typical MOOD-TOF histogram frame appears.
The main feature of the MOOD-TOF histogram frame is to display a set of histograms. Since there are many sets of histograms of the same type (one set per Crate) the histogram frame will display only the histograms of one crate. To change crate you have to select another one by using the Crate Combo Box.
Please, notice that despite not all sets of histograms are shown at the same time they are in memory and they are filled anyway. Therefore if you switch to another crate you’ll get the histograms correctly. The same applies also when you reset histograms: all histograms will be reset.

The histogram frame is made of a big Display Canvas and some little Switch Canvases. The aim of the Display Canvas is to display an enlarged view of the histograms which are displayed in the Switch Canvas. To draw a Switch Canvas Histogram in the Display Canvas just press the corresponding Switch Button. Moreover the Display Canvas allows to modify the histogram using the TOF Display Tool Bar (save picture, log scale, grid, statistics, ...).
You can also move (zoom) the X axis of the histogram by using the TOF Display Slider which is located just below the Display Canvas.
MOOD-TOF advanced features

The MOOD-TOF module has some advanced features which could be very interesting for special purposes. The special features can be controlled via the Special Feature Buttons.
The **Special Features** are the following:

1. **OPTIONS.** allows to select some options. This feature is actually not interesting.
2. **SINGLE CHANNEL.** This allows to select and monitor only one channel.
3. **REFERENCE CHANNEL.** This allows to select one channel as the time-reference (affects only time spectra).
4. **NOISE FILTER.** Very useful feature. It allows to filter out noisy channels.
5. **TRIGGER.** Also useful. It allows to monitor only events which have the required trigger pattern.