# **DAQ User Guide (&troubleshooting)**

- Common features
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# **Common features**

# DAQ epicsArch - Archived Data

You can add/remove any data you want in the epicsArchive data group readout.

The path is /cds/group/pcds/dist/pds/tmo/misc/

The tmo file we use is epicsArch\_tmo.txt. Let's look at two features of this

#### Adding a single variable to the file

Add a comment with a #

# Power meter at IM2K4

Add a pointer name of your choosing with \*

\*IM2K4\_XrayPower

For the LCLS2 DAQ, you should also specify which protocol is used to access the PV:

Add the pv name specifying whether it is read using channel access (ca), or pv access (pva) at the end

IM2K4:PPM:SPM:VOLT\_RBV ca

For the  ${f LCLS1}$   ${f DAQ}$ , you only list the PV

IM2K4:PPM:SPM:VOLT\_RBV

#### Add a whole file with a bunch of variables

You can made file with a subset of PVs, give it a meaningful name like epicsArch\_vmi.txt for all the vmi variables to record. You can then reference that file with '<' in the main file as below.

# MPOD/VMI information

< epicsArch\_vmi.txt

# **LCLS2 DAQ**

LCLS-II Data Acquisition and Analysis

# LCLS1 DAQ

Online Analysis Tutorial (AMI) - presented at 2014 SSR/LCLS Users Meeting: LCLS Data Analysis Workshop

DAQ Overview and Online Analysis - presented at 2010 SSRL/LCLS Users Meeting : LCLS Data Analysis Workshop Online Analysis Design - Matt's presentation for Jan 2012 DAQ Meeting

#### **DAQ Troubleshooting**

Trouble Shooting guide for scientists or first level responders.

# **Operating the DAQ**

- Editing a configuration
  - Example: Opal camera configuration
  - Changing a configuration while running
- Selecting detectors for readout
- Starting/stopping a run
- Watching progress of a run
- Running scans
  - Launching a Scan from DAQ Control GUI (deprecated)
  - Launching Scans Remotely (scripted)
- Running the sequencerConfiguring the EVR
- Detector timing settings
- Recovering from errors: restarting the DAQ

# **AMI Online Monitoring**

- Online Monitoring GUI

  - Using the Online Monitoring GUI
    Writing a plug-in to the Online Monitoring GUI
  - Writing a user application (reads from shared memory) (deprecated old C++ psana)
  - Online Monitoring and Simulation Using Files (deprecated old C++ psana)
  - Writing a user application, offline analysis style (reads from a file) (deprecated old C++ psana)
- XTC playback (a.k.a Offline AMI)

# **Python Scripting**

- Editing configurations the 'pycdb' module
- Controlling the DAQ the 'pydaq' module
- Monitoring the data the 'pyami' module