CSPad metrology and calibration files, links

Content

Metrology data

Run 4 Ds1 metrology (added April 13)

- metrology and map from June 11

Run 4 Ds1 average gain corrections

- /reg/neh/home/philiph/cxi/myana/gainAnalysis/hantkeGainCorrections_highCut_cleaned_relative.txt (using signal as a function of intensity)
- /reg/neh/home/philiph/cxi/myana/singlePhotonAnalysis/averagedCorrections_cleaned_relative.txt (using single photon peaks at low intensity)
- images at https://confluence.slac.stanford.edu/display/PCDS/CSPad+analysis+meeting%2C+10+August+11
- these should be sensible for any detector

Run 4 DSD metrology (pre-run) , image

- "There are 4 2x1 sensors that do not work. There is also a single 2x1 slot on one of the PCBs that has a bad connection. So the sensor works, but we can't operate it.
- The inner, beam-side 2x2s have tungsten shields, but only one other 2x2 does. Many of these modules were used during Run3 and so have some radiation damage and chipped sensors." - from Chris

Run 4 XPP metrology (pre-run) , image

- quad order in file is [0, 3, 1, 2] from looking at IZM modules - more info
- Mikhail's fits are at /reg/d/psdm/xpp/xpp47712/calib/CsPad::CalibV1/XppGon.0:Cspad.0/
- There are 9 types of files:
  - center/0-end.data
  - center_corr/0-end.data
  - marg_gap_shift/0-end.data
  - offset/0-end.data
  - offset_corr/0-end.data
  - quad_rotation/0-end.data
  - quad_tilt/0-end.data
  - rotation/0-end.data
  - tilt/0-end.data

Run 5 DSD metrology,image, configuration

Run 5 XPP (solid plate) metrology for Mar 2012: spreadsheet, description

- Chris writes, "Here is the metrology for the camera on the new baseplate. All sensors locations are relative to the lower, left corner of quadrant 3. Within each quadrant, I measured the sensor corners starting form the lower left corner of each sensor and then moved clockwise around the chip.
- With the new mechanical package doing this by quadrants doesn't make sense. In the future, it might be better to simply organize the metrology by vertical columns.
- The 2x2 module numbering is also attached. It's the same as last time except two modules were swapped."
-
- The metrology was done upside down, so q2->q0 etc and x->177457-x, y->185867-y
- photograph

Run 5 XPP low gain calibrations

- see 14 Mar 12 CSpad meeting page for comments
- fullFrameAbsGain_xppcom10_lowGain_noFN.txt

- fullFrameAbsGain_xppcom10_lowGain_fn.fits

Run 6 DS2 aka DSD CSPAD V1.2 metrology

- module map , metrology

Run 7 XPP V1.2 metrology

- metrology

Run 7 MEC 140k metrology

- metrology , related images - under OGP , 1-5 label mapping to module , order of survey points

Run 7 DS1 v1.2 metrology

- metrology of 17.00 19 Apr 2013, module mapping , picture of camera

2013-10-09-CSPAD-XPP-Metrology.xlsx

2013-12-10-Quad-MEC-Metrology.xlsx

2013-12-12-CSPAD-CXI-DSD-Metrology.xlsx

2013-12-20-CSPAD-CXI-DS1-Metrology.xlsx

2014-03-19-CSPAD-CXI-DS1-Metrology.xlsx

May 2, 2014 Files and comments from Gabriel about recent metrology work:

- The DS1 detector was rebuilt on March 12-17 2014.
- Thus for the DS1:
  - the Milathianaki experiment and later should use the 2014-03-19 metrology
  - the Yachandra experiment and earlier should use the previous 2013-12-20 metrology
- The DS2 should use the 2013-12-12 metrology

2014-05-15-CSPAD-CXI-DS1-Metrology.xlsx

2014-05-15-CSPAD-CXI-DS2-Metrology.xlsx

Oct 2, 2014: Files and comments from Gabriel

2014-08-27-CXI-DS2-Metrology.xlsx

2014-09-24-CXI-DS1-Metrology.xlsx

Attached, the most recent CXI metrology files. These replace the May 2014 versions and should be used for all experiments after September 24, 2014.

Changes in CXI-DS1:

- Quad 3 (zero based counting) reworked; metrology updated in the attached file: "DS1-Metrology-Sept-24-2014"
- Q3 Z values measured properly
- Mikhail, please double check Q3 values for consistency
- The other 3 quads (Q0, Q1, Q2) are unchanged (as in the previous metrology: May 15 2014).
- Please note that this camera has been renamed. Possible new name: "CXI Camera 1"+ version number. Jason, could you please confirm the exact name and version.

Changes in CXI-DS2:

- Quad 1 (zero based counting) reworked; metrology updated in the attached file: "DS2-Metrology-Aug-27-2014"
- Q1 Z values: measured incorrectly (OGP bug?), please discard.
- Mikhail, could you please check Q1 values for consistency?
- The other 3 quads (Q0, Q2, Q3) are unchanged (as in the previous metrology: May 14, 2014).
- Please note that this camera has been renamed. Possible new name: "CXI Camera 2"+ version number. Jason, could you please confirm the exact name and version.

As always, these excel metrology files are NOT FOR DISTRIBUTION to avoid user confusion. Only Mikhail's curated version should be distributed and used.

Feb 3, 2014: File and comments from Gabriel

⚠️

[2015-01-20-CSPAD-CXI-DS2-Metrology.xlsx](#)

This is the former CXI DS2 camera, with previous metrology file in DS2-Metrology-Aug-27-2014.xlsx (sent previously).

As discussed previously, the camera is now named the CXI "Camera2_V16_20150120", with new metrology in the attached file. The only quad that is changed is quad 3 (counting from 0 to 3).

Feb 3, 2014: New CXI naming scheme:

Date: Tue, 3 Feb 2015 12:49:01 -0800
From: "Blaj, Gabriel" <blaj@slac.stanford.edu>

After talking with Jason once again about the confusing naming scheme for the cspad 2.3m cameras, this is what we came up with. Jason and Gabriel

- Camera1: engraved on the camera, not related to position anymore
- V16: hw and fw version
- 20140924: the date of the metrology file (a single number is shorter but the long date reduces confusion,
- stimulates using the relevant metrology, makes it easy to see which experiment used which version etc.)

Camera1_V16_20140924

- formerly "DS1"
- fixed and moved to DS2 (september 2014)
- mixed: 3 old A boards + 1 new board (different settings: 3 old: 4/40 1 new: 3/19. Note the different Vref)
- now 2014 Nov 19 moved back to DS1

Camera2_V16_20140827

- formerly "DS2"
- 4 new A boards (uniform settings, 3/19; note the different Vref)
- one D board got blasted/shorted 2014 Nov 15
- now 2014 Nov 19 out for repairs (will get a new 8 digit number after fixing and taking new metrology)

Camera3_V16_20131009

- XPP camera, will come to CXI for one experiment in December 2014

Camera4_V12_201?????

- The other XPP camera, happily sleeping in B33

[2015-04-03 Quad1 MEC Alignment](#)

[2015-06-08 Quad1 MEC Alignment](#)

[2016-02-05 CSPAD CXI Camera2 Metrology](#)

[2016-02-05-CSPAD-CXI-Camera2-Metrology.xlsx](#) (v2 with quad 3 from 20150120)

Gabriel Blaj: metrology file for CXI-Camera2-V16-20160205, replacing CXI-Camera2-V16-20150120, for all experiments taking place on or after February 05, 2016.
The only changes from the previous version are Quads 0 and 1.

References

- [CSPAD Alignment](#)
- [CSPAD2x2 Alignment](#)
- [CSPAD Geometry and Alignment](#)

- CSPAD Geometry Software (depricated)