Calibration of Space Charge and Grid Leak

Xiaohai Jin

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Run Information

- 19141009, Physics
- 19141010, Physics
- 19141011, Physics
- 19141012, Physics
- 19141013, Physics
- 19141014, Physics
- 19141015, Physics
- 19141016, Physics
- 19141017, Physics [B]
- 19141018, Physics
- 19141019, Physics
- 19141020, Physics
- 19141021, Physics
- 19141022, Physics

RHIC SUMMARY

RHIC Ring	Species	Energy, GeV	Max Ions E09	Fill Number
Blue	Au	13.500	167.15	21,801
Yellow	Au	13.500	165.8	21,801

TRIGGER SUMMARY

Clock Frequency [Start / End]: **9361217** / **9361217** Hz, RHIC Clock

TIER1 File Name: trg_current.bin

TRIGGER LABEL	STREAM	DAQ TRIGGER ID(s)	OFFLINE TRIGGER ID(s)	PRESCALE	EVENTS
mb_tof2	physics	2	2	1.0	2675389
epd-mon	physics	1000000	25	21014.9	6773
epd-tac-mon	physics	2000000	26	5165.7	6533
epd-tac-tofmult1	physics	4000000	27	154.7	7373
bbc-mon-tac-tofmult2	physics	40000000	31	207.6	7251
tof1	physics	80000000	32	12167386.0	3
tof2	physics	100000000	33	7543729.5	3
ZEROBIAS	zerobias	1000000000000000	9300	842508.4	18650
mb_hlt_good	physics	1000	610016	1.0	963362
mb	physics	1	610021	1.0	3057006

Daq File

- /star/data03/daq/2018/141/19141020/st_physics_19141020_raw_2000011.daq
- /star/data03/daq/2018/143/19143007/st_physics_19143007_raw_4000015.daq
- /star/data03/daq/2018/145/19145006/st_physics_19145006_raw_5000006.daq
- /star/data03/daq/2018/147/19147047/st_physics_19147047_raw_1500014.daq
- /star/data03/daq/2018/149/19149031/st_physics_19149031_raw_3500008.daq
- /star/data03/daq/2018/155/19155058/st_physics_19155058_raw_3000007.daq
- /star/data03/daq/2018/157/19157003/st_physics_19157003_raw_5500010.daq
- /star/data03/daq/2018/159/19159007/st_physics_19159007_raw_2500016.daq
- /star/data03/daq/2018/161/19161050/st_physics_19161050_raw_1500014.daq
- /star/data03/daq/2018/163/19163014/st_physics_19163014_raw_2000017.daq
- /star/data03/daq/2018/165/19165021/st_physics_19165021_raw_3000001.daq
- /star/data03/daq/2018/167/19167004/st_physics_19167004_raw_1500012.daq
- /star/data03/daq/2018/168/19168034/st_physics_19168034_raw_1500013.daq
- /star/data03/daq/2018/144/19144031/st_physics_19144031_raw_1500014.daq
- /star/data03/daq/2018/148/19148011/st_physics_19148011_raw_1500014.daq

Code and Data Directory

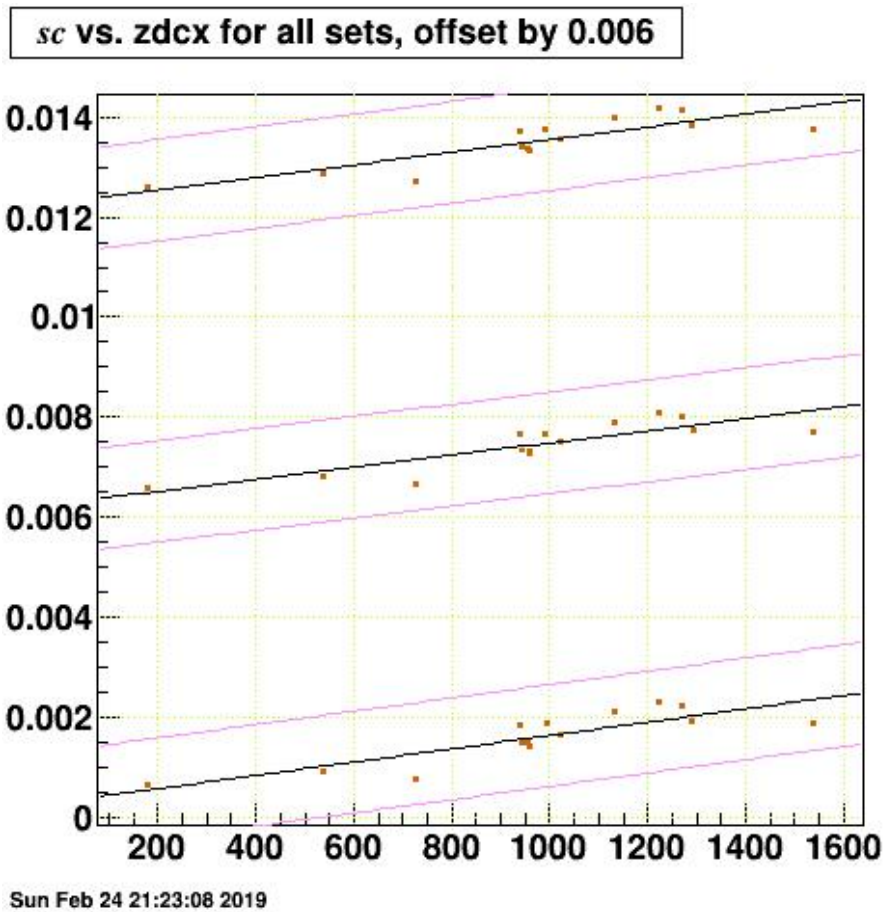
- Code Directory:
  1. /star/u/jhai/WorkCode/SCGL_27GeV/EventPass (SC = 0, GL = 9, 10, 11)
  2. /star/u/jhai/WorkCode/SCGL_27GeV/EventPass_1 (SC = 2.649e-5, GL = 9, 10, 11)
  3. /star/u/jhai/WorkCode/SCGL_27GeV/EventPass_2 (SC = 6.843e-6, GL = 10.6, 11.6, 12.6)
  4. /star/u/jhai/WorkCode/SCGL_27GeV/EventPass_3 (SC = 1.818e-6, GL = 7.65, 8.65, 9.65)
  5. /star/u/jhai/WorkCode/SCGL_27GeV/EventPass_4 (SC = 1.608e-6, GL = 6.02, 7.02, 8.02)
- event.root Directory:
  1. /star/u/jhai/gpfs01/DATA/Service/27GeV/EventPass
  2. /star/u/jhai/gpfs01/DATA/Service/27GeV/EventPass_1
  3. /star/u/jhai/gpfs01/DATA/Service/27GeV/EventPass_2
  4. /star/u/jhai/gpfs01/DATA/Service/27GeV/EventPass_3
  5. /star/u/jhai/gpfs01/DATA/Service/27GeV/EventPass_4

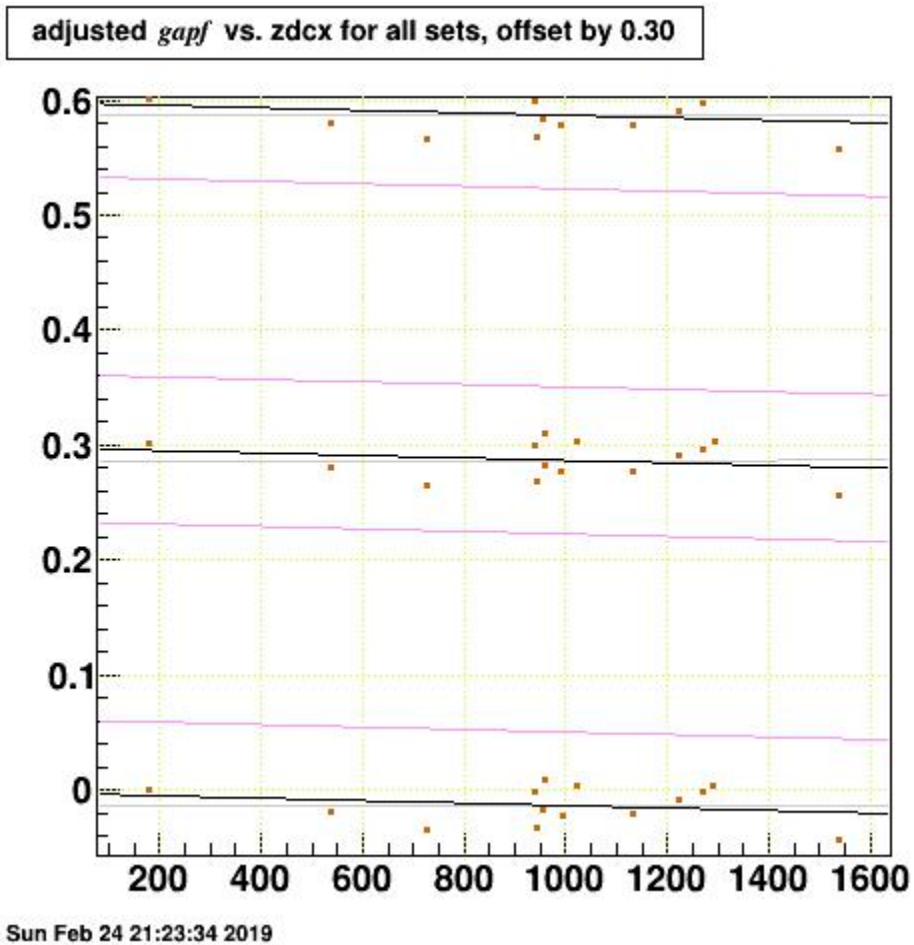
Pass0 SC = 0, GL = 9, 10, 11

```
Attaching file do_calibration0_9/file/Hist16803400.root as _file41...
Processing Calib_SC_GL.C+(0,0,"zdcx", 0)...
Set   0: 14 files added with...
  used sc =
  used ewratio = 1.000000
  used GL = 9
Set   1: 14 files added with...
  used sc =
  used ewratio = 1.000000
  used GL = 11
Set   2: 14 files added with...
  used sc =
  used ewratio = 1.000000
  used GL = 10
Found 3 dataset specifications.
```

```
*** The following calibration values may not be trusted at this time... ***

*** Try the following calibration values: ***
sc = 2.649e-05 * ((zdcx) - (-225.4)) with GL =  9.00

sc = 2.649e-05 * ((zdcx) - (-225.4)) with GL = 11.00

sc = 2.649e-05 * ((zdcx) - (-225.4)) with GL = 10.00
```

Pass0 SC = 0, GL = 9, 10, 11



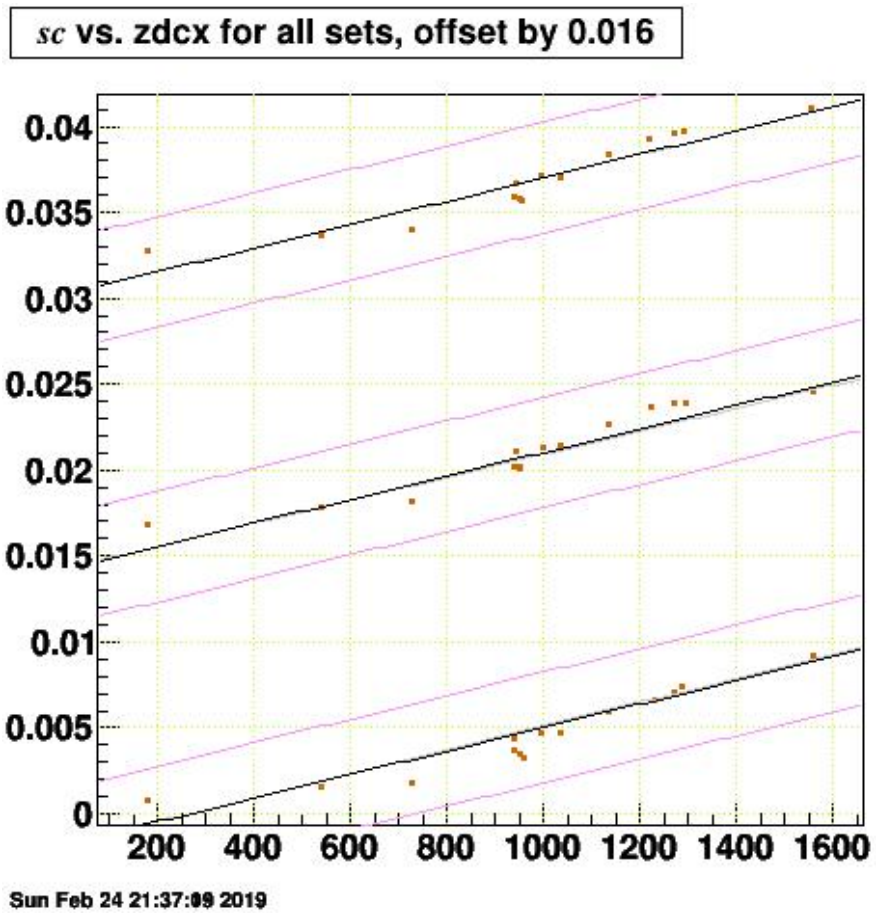


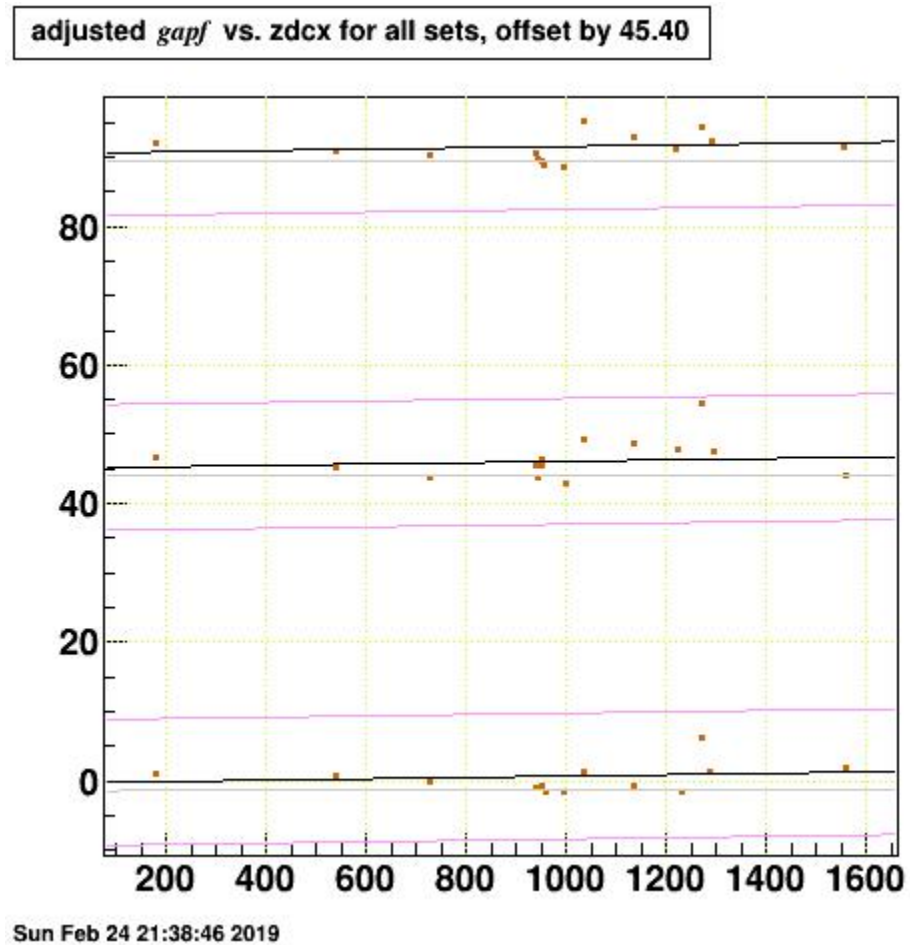
Pass1 SC = 2.649e-5, GL = 9, 10, 11

```
Attaching file do_calibration2.649_9/file/Hist16700400.root as _fil
Attaching file do_calibration2.649_9/file/Hist16803400.root as _fil
Processing Calib_SC_GL.C+(0,0,"zdcx", 0)...
Set   0: 14 files added with...
  used sc = (2.649e-05)*(zdcx-(-225.4))
  used ewratio = 1.000000
  used GL = 9
Set   1: 14 files added with...
  used sc = (2.649e-05)*(zdcx-(-225.4))
  used ewratio = 1.000000
  used GL = 11
Set   2: 14 files added with...
  used sc = (2.649e-05)*(zdcx-(-225.4))
  used ewratio = 1.000000
  used GL = 10
Found 3 dataset specifications.
```

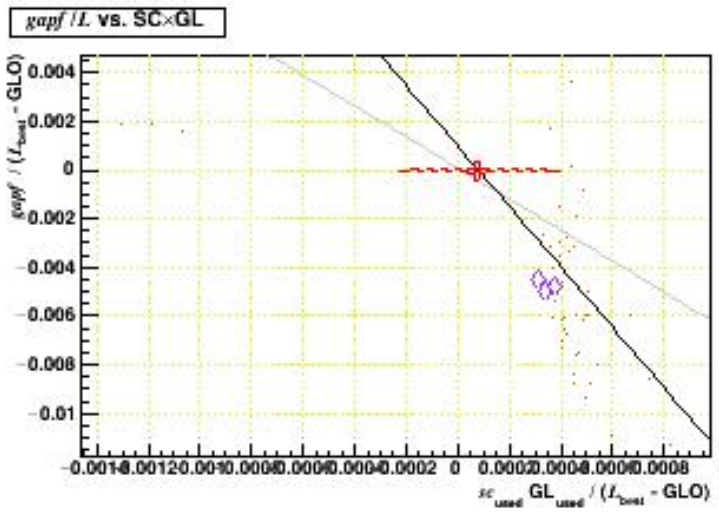
```
*** FINAL CALIBRATION VALUES: ***
sc = (6.843e-06 +/- 1.477e-06) * ((zdcx) - ( 267.8 +/-  166.9))
  with GL = 11.60 +/- 48.13
```

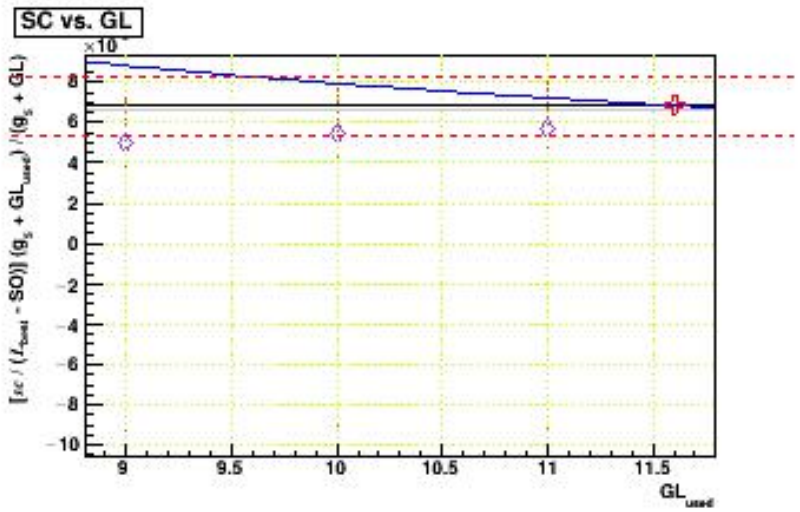
Pass1 SC = 2.649e-5, GL = 9, 10, 11

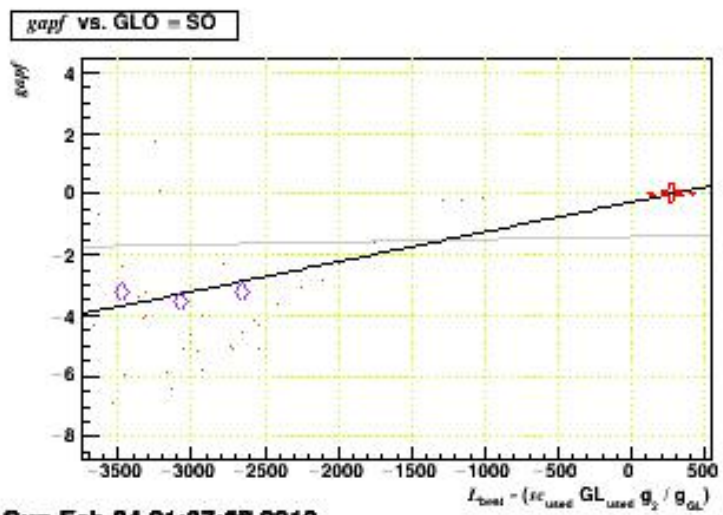


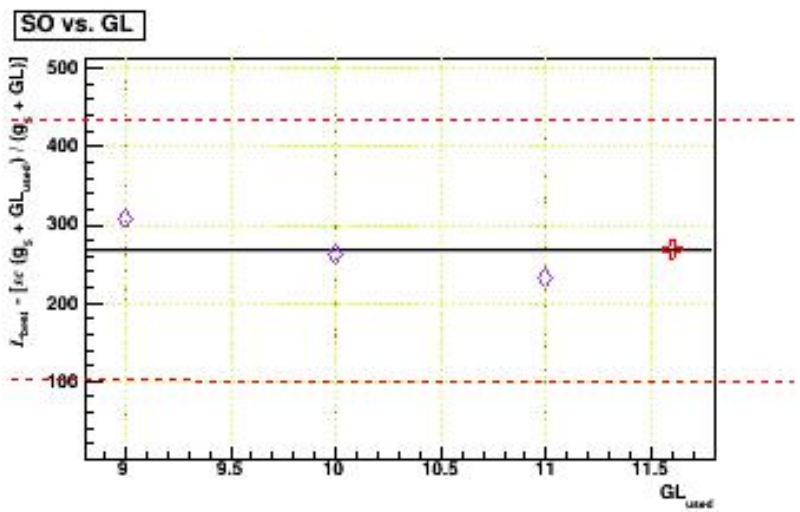


Pass1 SC = 2.649e-5, GL = 9, 10, 11







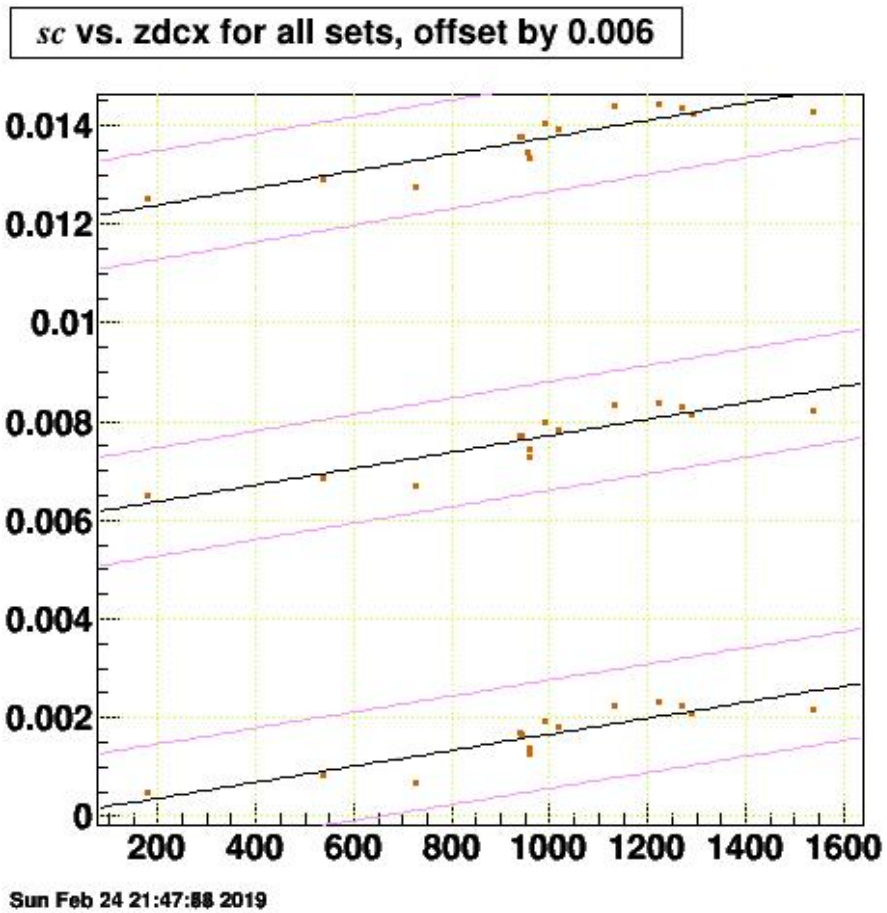


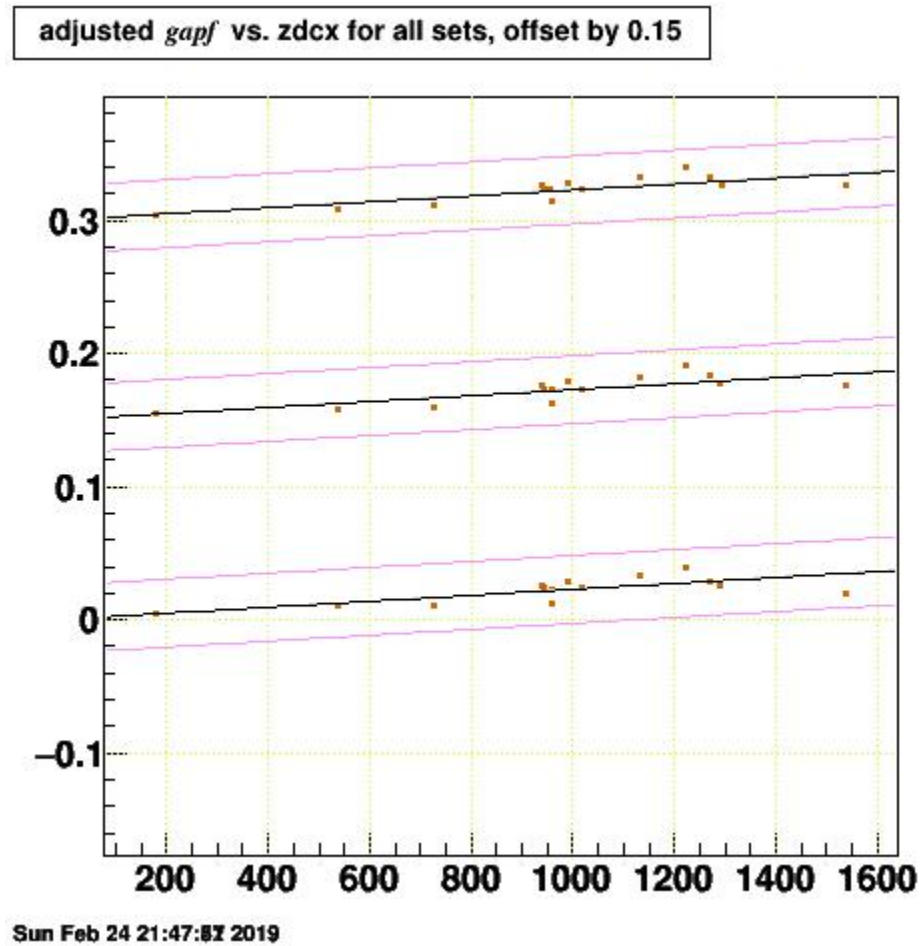
Pass2 SC = 6.843e-6, GL = 10.6, 11.6, 12.6

```
Attaching file do_calibration6.843_12.60/file/Hist16700400.root as _file40.
Attaching file do_calibration6.843_12.60/file/Hist16803400.root as _file41.
Processing Calib_SC_GL.C+(0,0,"zdcx", 0)...
Set   0: 14 files added with...
  used sc = (6.843e-06)*(zdcx-(267.8))
  used ewratio = 1.000000
  used GL = 12.6
Set   1: 14 files added with...
  used sc = (6.843e-06)*(zdcx-(267.8))
  used ewratio = 1.000000
  used GL = 11.6
Set   2: 14 files added with...
  used sc = (6.843e-06)*(zdcx-(267.8))
  used ewratio = 1.000000
  used GL = 10.6
Found 3 dataset specifications.
```

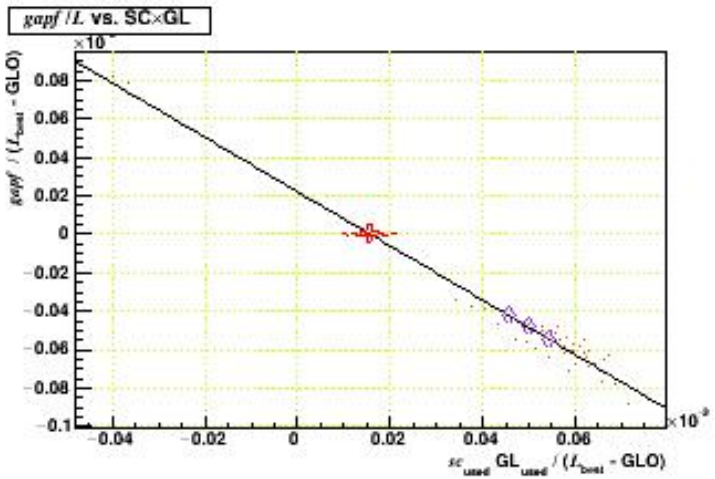
```
*** FINAL CALIBRATION VALUES: ***
sc = (1.818e-06 +/- 3.546e-07) * ((zdcx) - (-26.85 +/-  203.7))
  with GL =  8.65 +/-  3.18
```

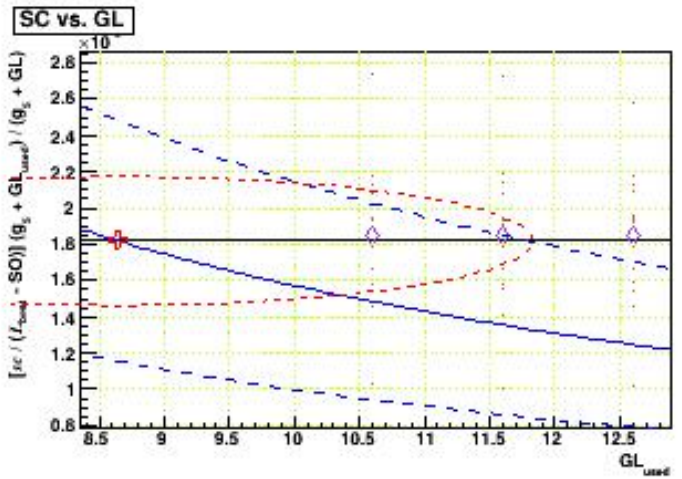
Pass2 SC = 6.843e-6, GL = 10.6, 11.6, 12.6

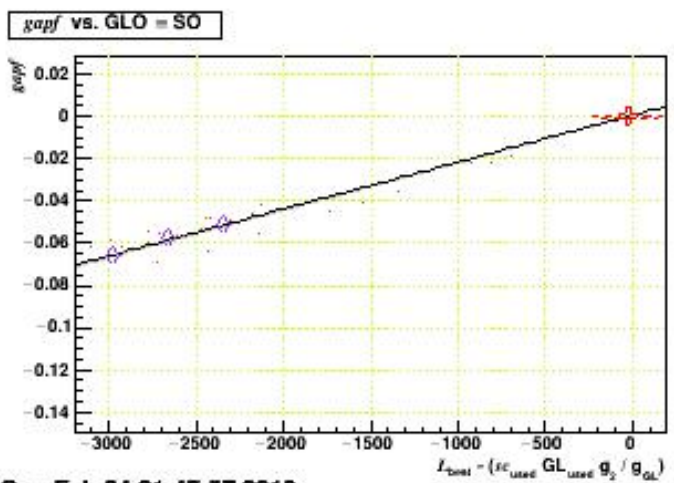


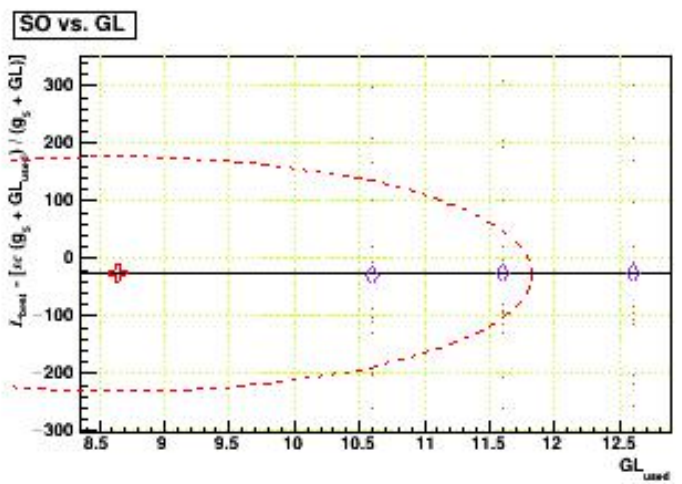


Pass2 SC = 6.843e-6, GL = 10.6, 11.6, 12.6







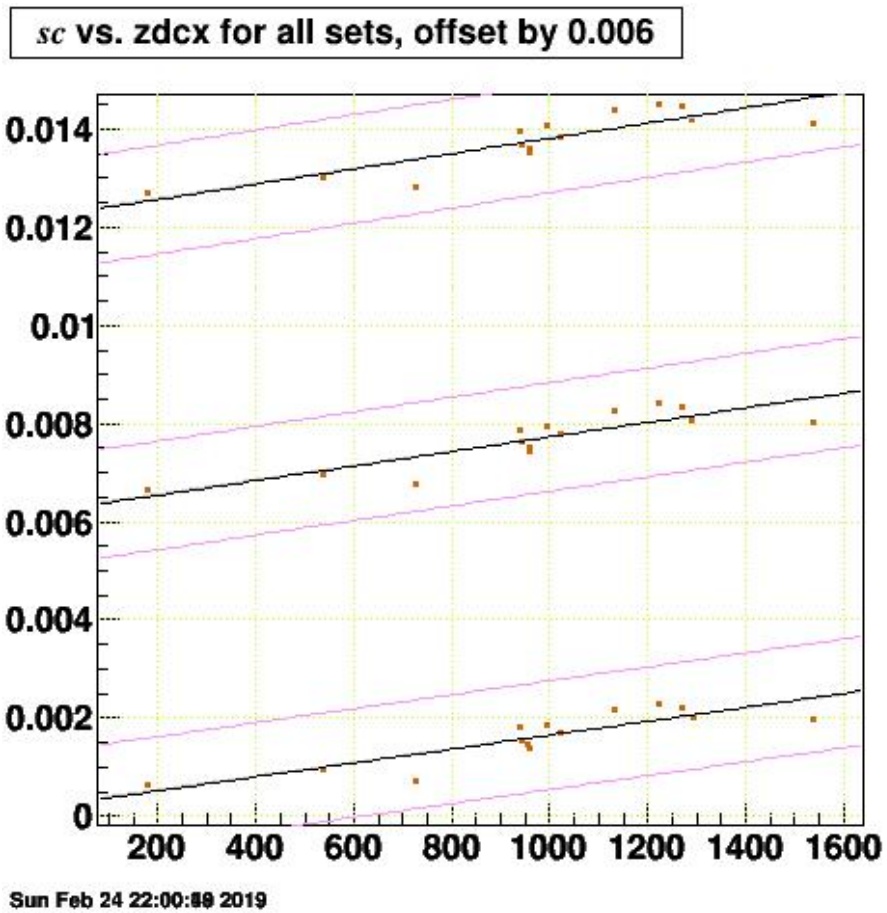


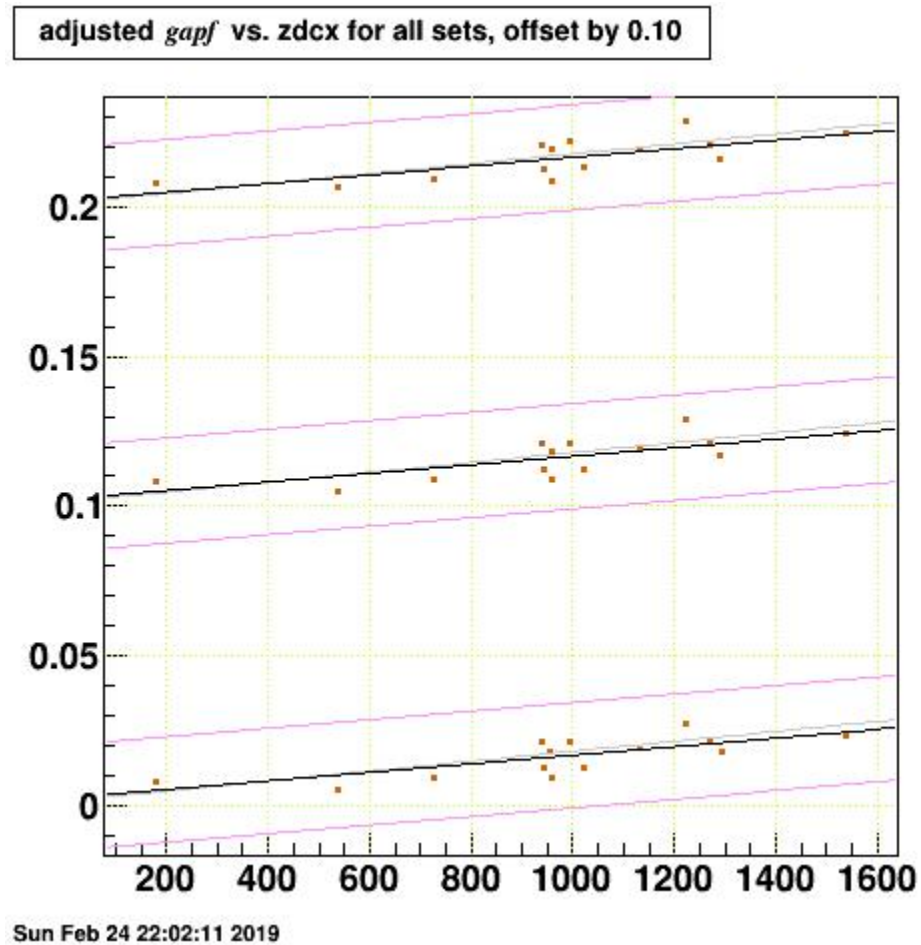
Pass3 SC = 1.818e-6, GL = 7.65, 8.65, 9.65

```
Attaching file do_calibration1.818_9.65/file/Hist16700400.root as _file40..
Attaching file do_calibration1.818_9.65/file/Hist16803400.root as _file41..
Processing Calib_SC_GL.C+(0,0,"zdcx", 0)...
Set   0: 14 files added with...
  used sc = (1.818e-06)*(zdcx-(-26.85))
  used ewratio = 1.000000
  used GL = 9.65
Set   1: 14 files added with...
  used sc = (1.818e-06)*(zdcx-(-26.85))
  used ewratio = 1.000000
  used GL = 8.65
Set   2: 14 files added with...
  used sc = (1.818e-06)*(zdcx-(-26.85))
  used ewratio = 1.000000
  used GL = 7.65
Found 3 dataset specifications.
```

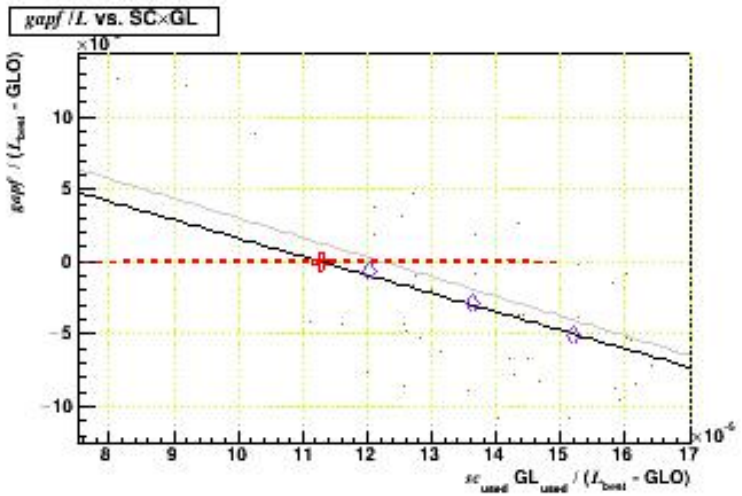
```
*** FINAL CALIBRATION VALUES: ***
sc = (1.608e-06 +/- 3.107e-07) * ((zdcx) - (  -163 +/-  226.7))
  with GL =  7.02 +/-  2.31
```

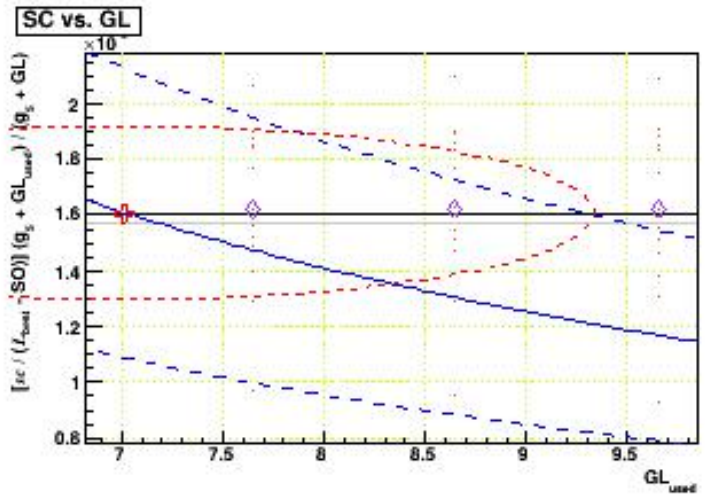
Pass3 SC = 1.818e-6, GL = 7.65, 8.65, 9.65

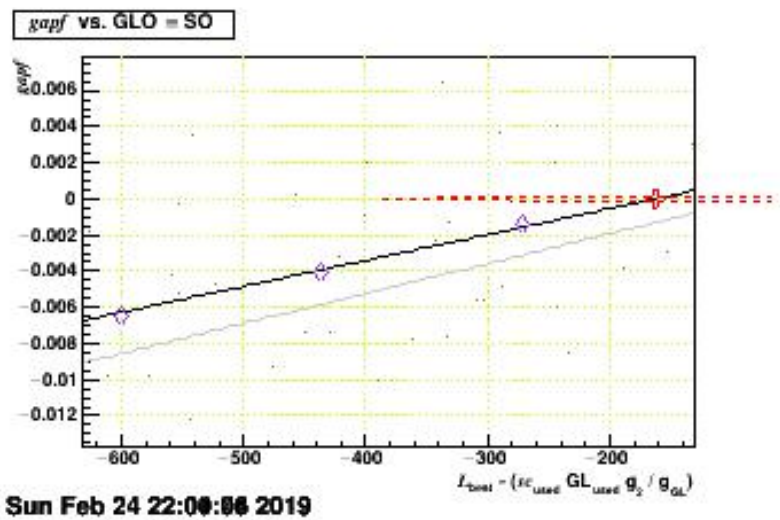


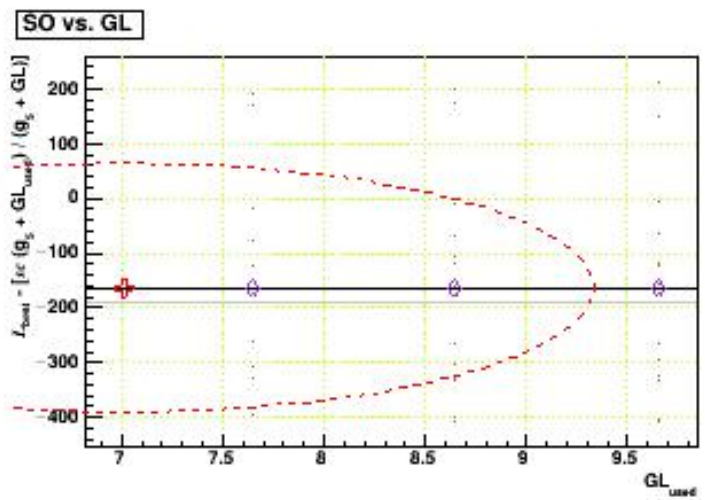


Pass3 SC = 1.818e-6, GL = 7.65, 8.65, 9.65







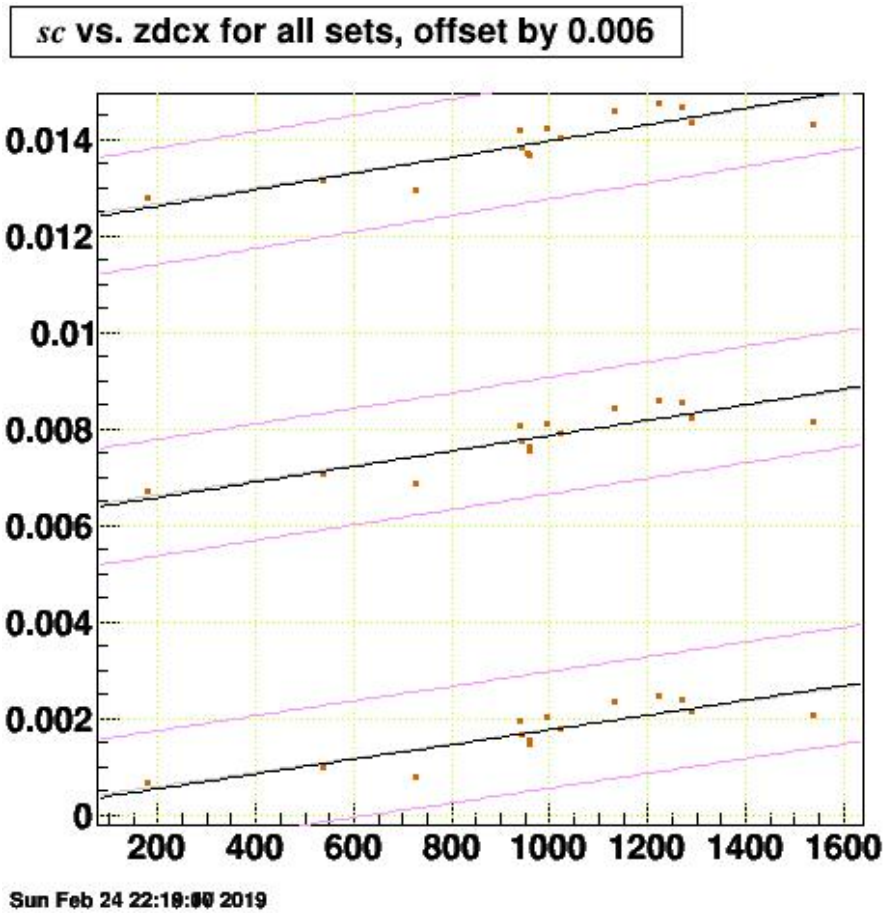


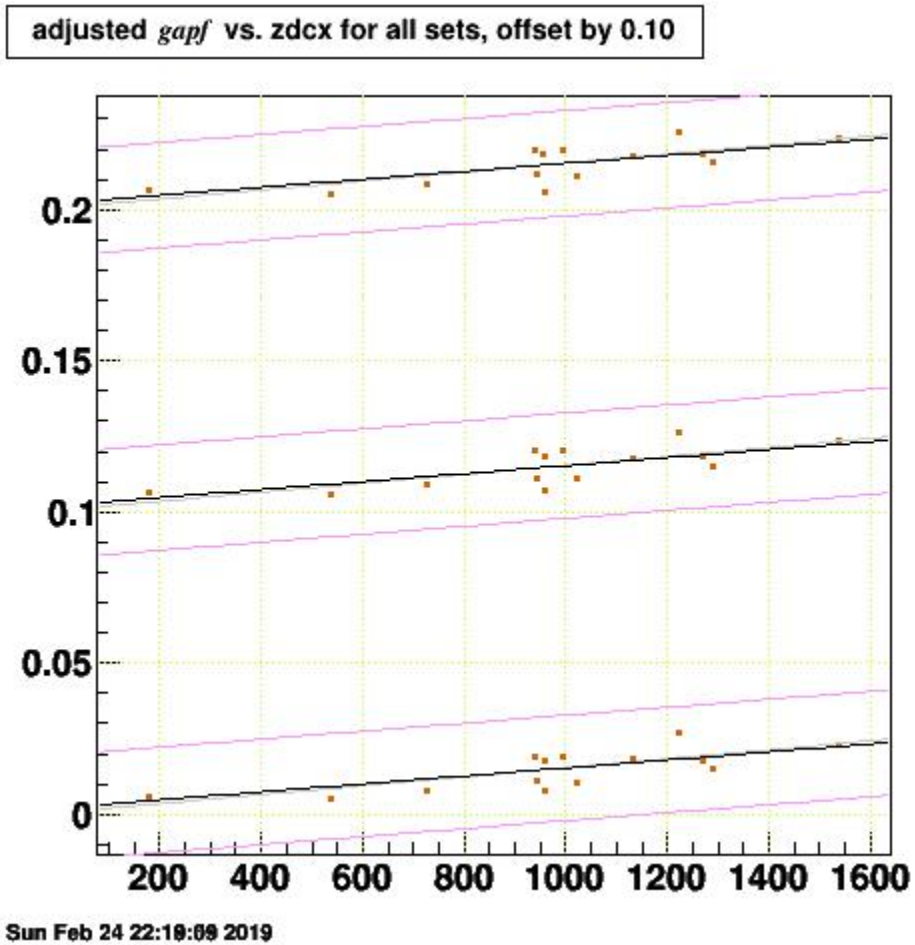
Pass4 SC = 1.608e-6, GL = 6.02, 7.02, 8.02

```
Attaching file do_calibration1.608_8.02/file/Hist16700400.root as _file40...
Attaching file do_calibration1.608_8.02/file/Hist16803400.root as _file41...
Processing Calib_SC_GL.C+(0,0,"zdcx", 0)...
Set   0: 14 files added with...
  used sc = (1.608e-06)*(zdcx-(-163))
  used ewratio = 1.000000
  used GL = 8.02
Set   1: 14 files added with...
  used sc = (1.608e-06)*(zdcx-(-163))
  used ewratio = 1.000000
  used GL = 7.02
Set   2: 14 files added with...
  used sc = (1.608e-06)*(zdcx-(-163))
  used ewratio = 1.000000
  used GL = 6.02
Found 3 dataset specifications.
```

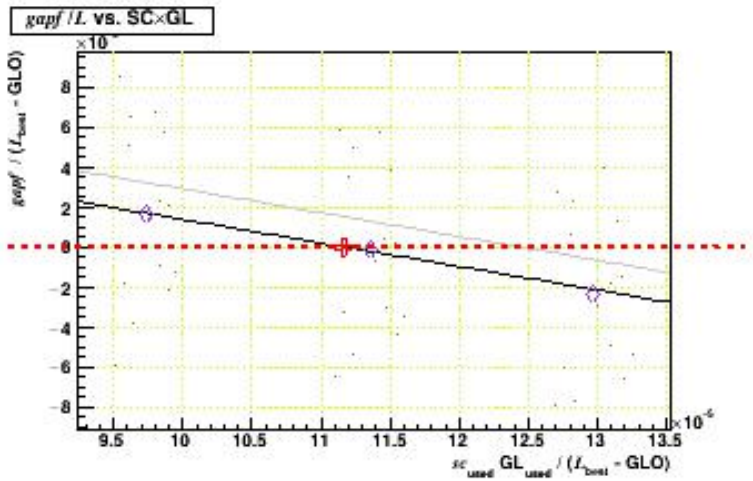
```
*** FINAL CALIBRATION VALUES: ***
sc = (1.608e-06 +/- 3.194e-07) * ((zdcx) - (-162.1 +/-  232.7))
  with GL =  6.95 +/-  2.44
```

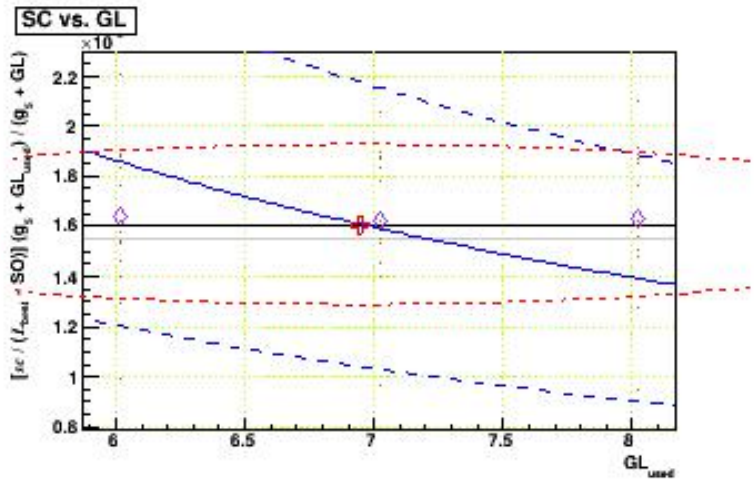
Pass4 SC = 1.608e-6, GL = 6.02, 7.02, 8.02

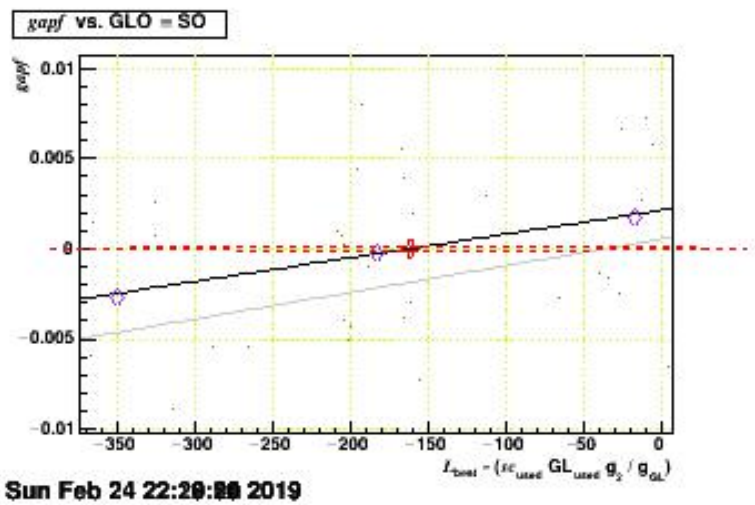


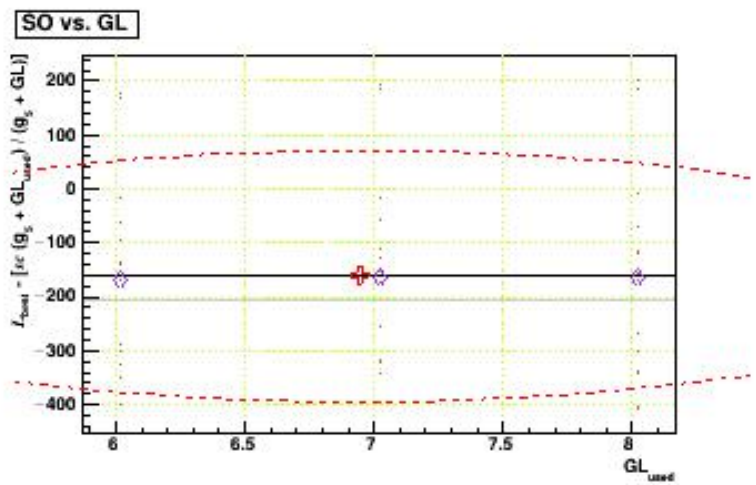


Pass4 SC = 1.608e-6, GL = 6.02, 7.02, 8.02









Final Result

sc = (1.608e-06 +/- 3.194e-07) * ((zdcx) - (-162.1 +/- 232.7))

GL = 6.95 +/- 2.44