

TPC Space Charge Calibration

Xiaohai Jin

Feb 16 2019

Shanghai Institute of Applied Physics

Run Information

19072006, [Physics](#)
19072007, [Physics](#)
19072008, [Physics](#)
19072010, [Physics](#)
19072011, [Physics](#)
19072012, [Physics](#)
19072013, [Physics](#)
19072014, [Physics](#)
19072015, [Physics](#)
19072016, [Physics](#)
19072017, [Physics](#)
19072018, [Physics](#)
19072019, [Physics](#)
19072020, [Physics](#) [B]
19072021, [Physics](#) [B]

dbPlots	TPC Inn. Cur. RS1	TPC Out. Cur. RS1	TPC Inn. Cur. Avg	TPC Out. Cur. Avg	
	TPC FC Inn.I W1	TPC FC Inn.I E1	TPC FC Ground Shell I	ZDC-AND	Status
TCIM Registers Data	PRESENT (LINK)				
Event Builders (trg cnt):	1 2 3 4 5 6 7 8 9 10				

RHIC SUMMARY			
RHIC Ring	Species	Energy, GeV	Max Ions E09
Blue	Ru	100.000	120.89
Yellow	Ru	100.000	114.68

TRIGGER SUMMARY				
Clock Frequency		9383164 / 9383164 Hz, RHIC Clock		
[Start / End]				
TIER1 File Name		trg_current.bin		
TRIGGER LABEL	STREAM	DAQ TRIGGER ID(s)	OFFLINE TRIGGER ID(s)	PRESO
UPC-JPsi	upc	1	1	
UPC-Jpsi-zdc	upc	2	2	
vpdmb-30	physics	400	11	
vpdmb-30-hlt	physics	800	12	
bht1	hf	8000	16	
hlt1	hf	10000	17	

Daq File

- /star/data03/daq/2018/072/19072018/st_physics_19072018_raw_5000008.daq
- /star/data03/daq/2018/072/19072018/st_physics_19072018_raw_3000002.daq
- /star/data03/daq/2018/072/19072018/st_physics_19072018_raw_1000008.daq
- /star/data03/daq/2018/072/19072017/st_physics_19072017_raw_1000010.daq
- /star/data03/daq/2018/072/19072017/st_physics_19072017_raw_5000001.daq
- /star/data03/daq/2018/072/19072017/st_physics_19072017_raw_3000001.daq
- /star/data03/daq/2018/072/19072014/st_physics_19072014_raw_3000001.daq
- /star/data03/daq/2018/072/19072014/st_physics_19072014_raw_1000002.daq
- /star/data03/daq/2018/072/19072014/st_physics_19072014_raw_5000001.daq
- /star/data03/daq/2018/072/19072015/st_physics_19072015_raw_2500002.daq
- /star/data03/daq/2018/072/19072015/st_physics_19072015_raw_5500001.daq
- /star/data03/daq/2018/072/19072015/st_physics_19072015_raw_1500001.daq

Daq File

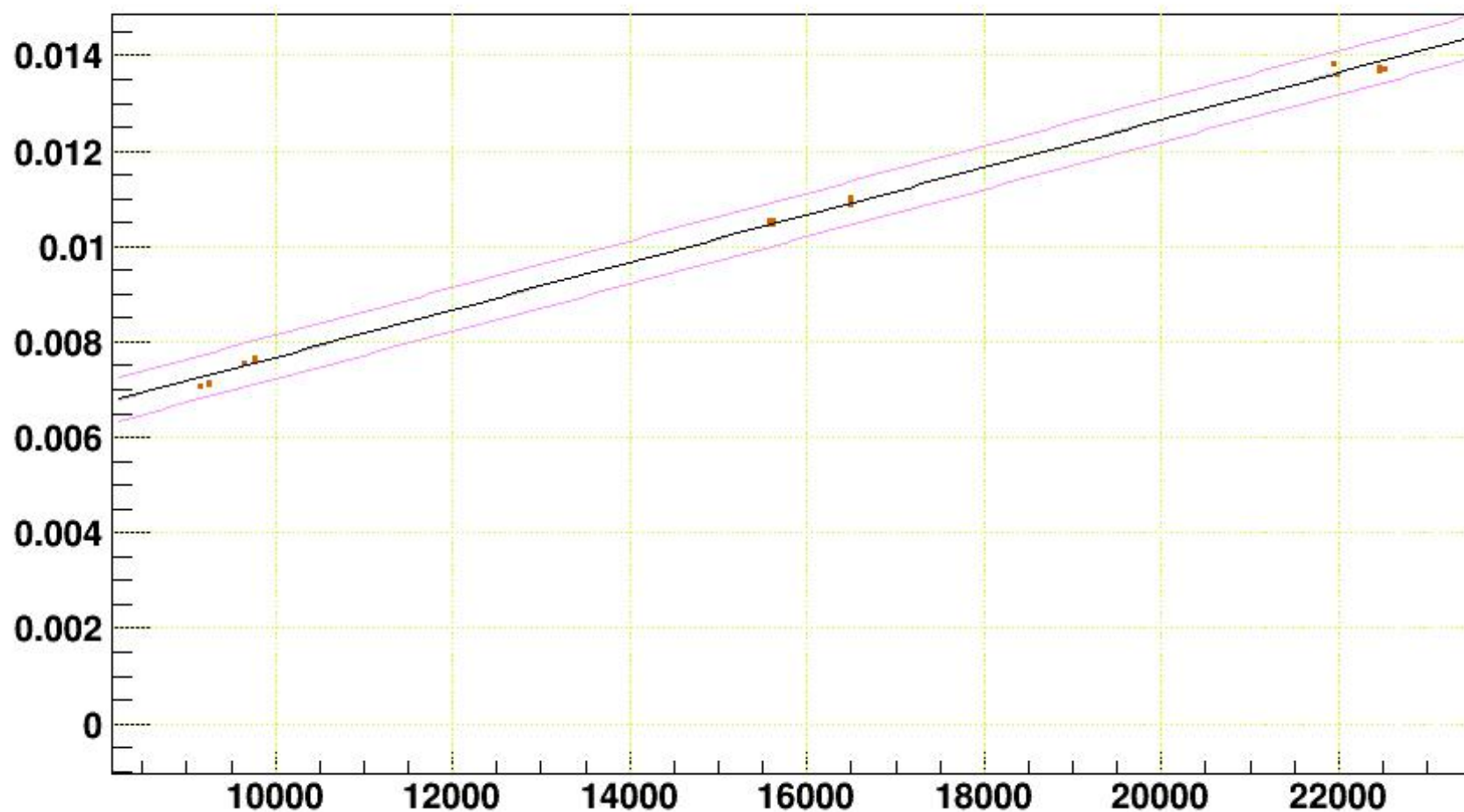
- /star/data03/daq/2018/072/19072015/st_physics_19072015_raw_2000001.daq
- /star/data03/daq/2018/072/19072015/st_physics_19072015_raw_3500001.daq
- /star/data03/daq/2018/072/19072015/st_physics_19072015_raw_4500002.daq
- /star/data03/daq/2018/072/19072015/st_physics_19072015_raw_3000002.daq
- /star/data03/daq/2018/072/19072015/st_physics_19072015_raw_4000001.daq
- /star/data03/daq/2018/072/19072013/st_physics_19072013_raw_1000010.daq
- /star/data03/daq/2018/072/19072013/st_physics_19072013_raw_3000001.daq
- /star/data03/daq/2018/072/19072013/st_physics_19072013_raw_2000001.daq
- /star/data03/daq/2018/072/19072013/st_physics_19072013_raw_4000001.daq
- /star/data03/daq/2018/072/19072013/st_physics_19072013_raw_5000009.daq
- /star/data03/daq/2018/072/19072015/st_physics_19072015_raw_1000002.daq

Code and Data Directory

- Code Directory:
 1. /star/u/jhai/SC_GL/submit/submit6.8_9
(Strength of GL between inner/outer sectors is set 14.65)
 2. /star/u/jhai/SC_GL/submit/submit6.8_10
(Strength of GL between inner/outer sectors is set 15.65)
- event.root directory:
 1. /star/u/jhai/gpfs01/DATA/Service/SCGL_9
 2. /star/u/jhai/gpfs01/DATA/Service/SCGL_10

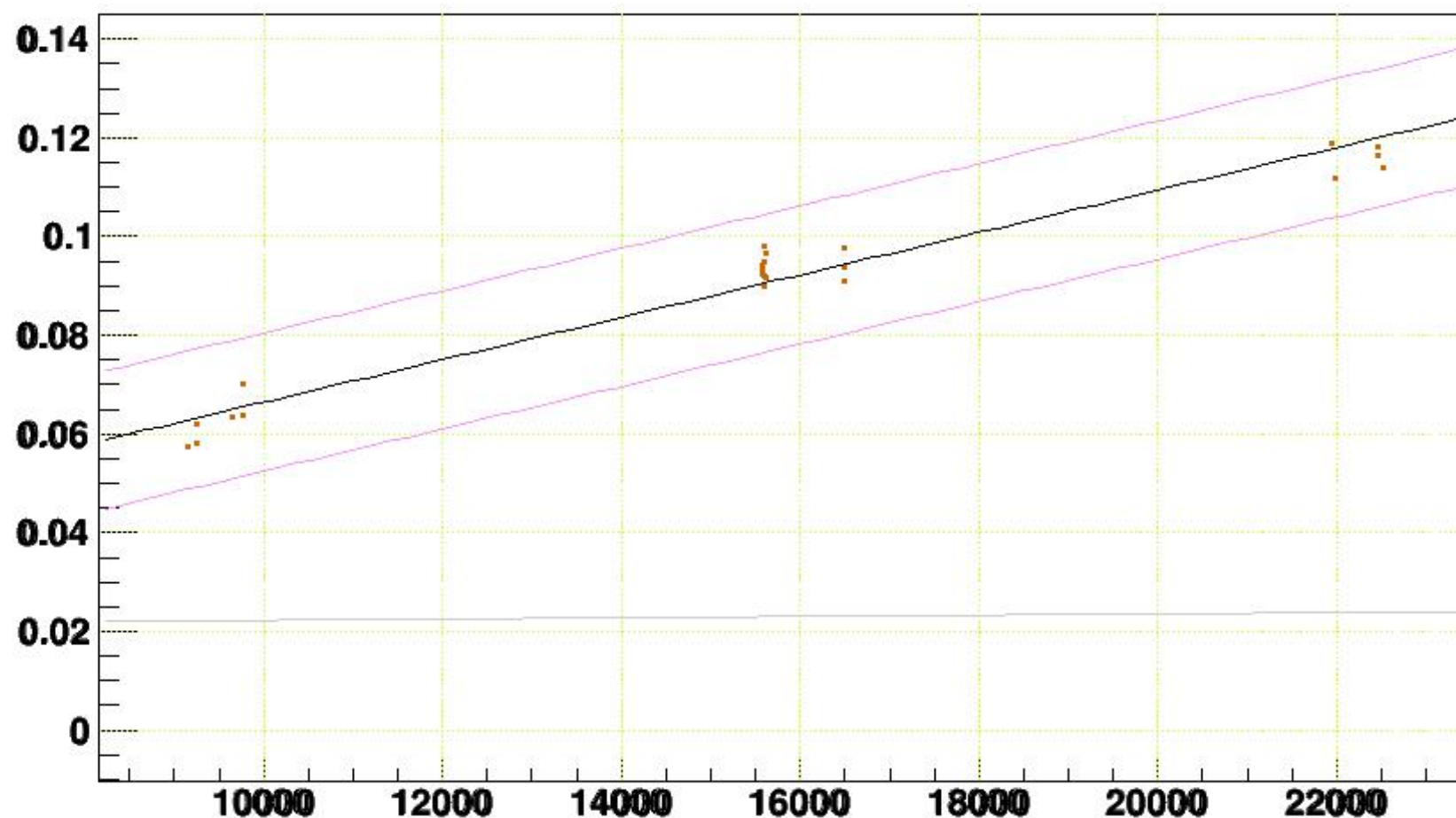
Fitting Result ($GL = 14.65$)

sc vs. *zdcx* for all sets, offset by 0.004

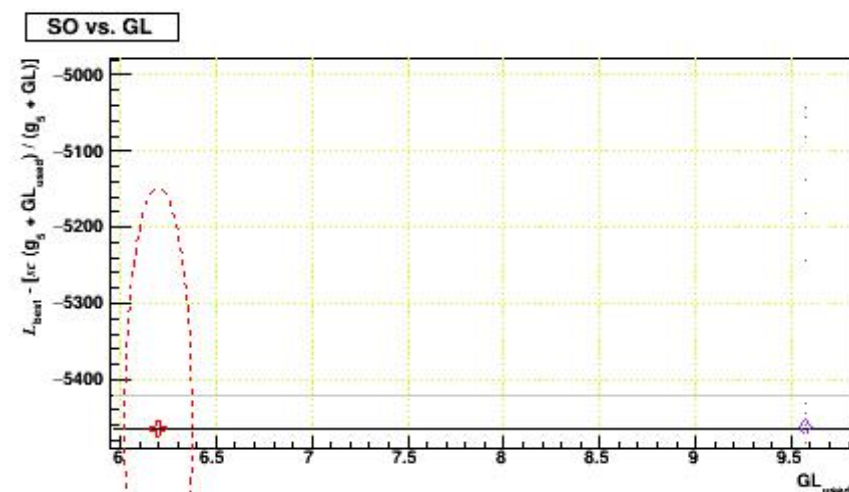
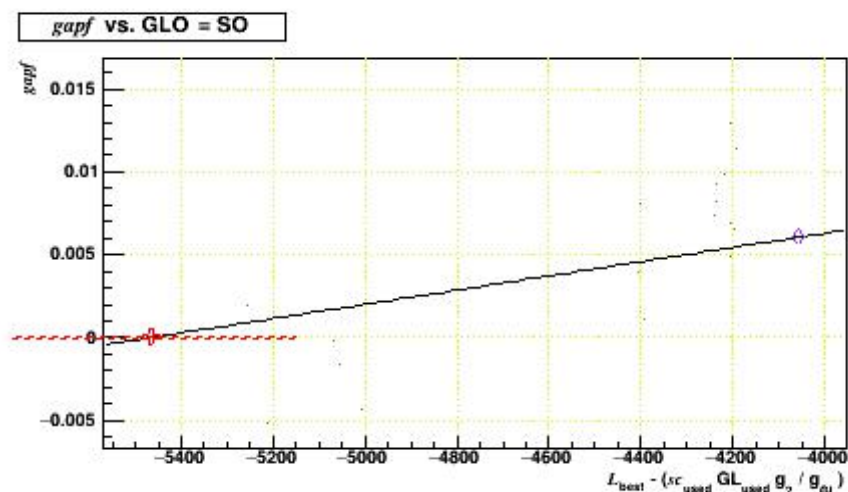
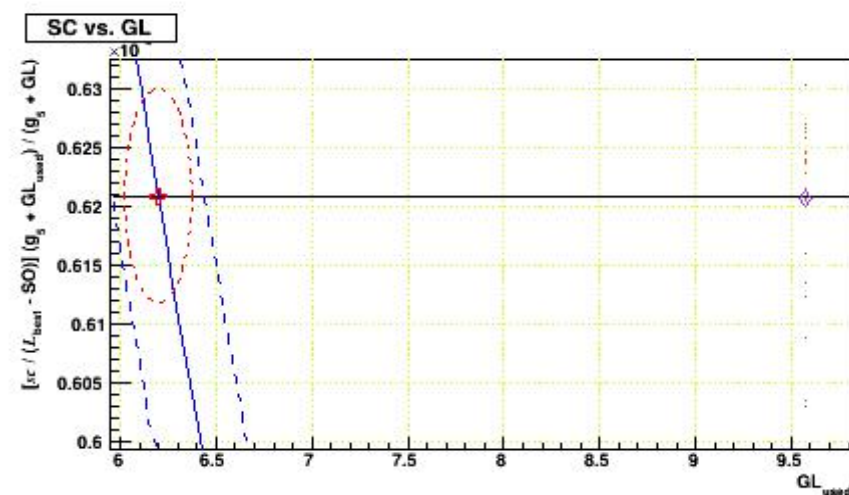
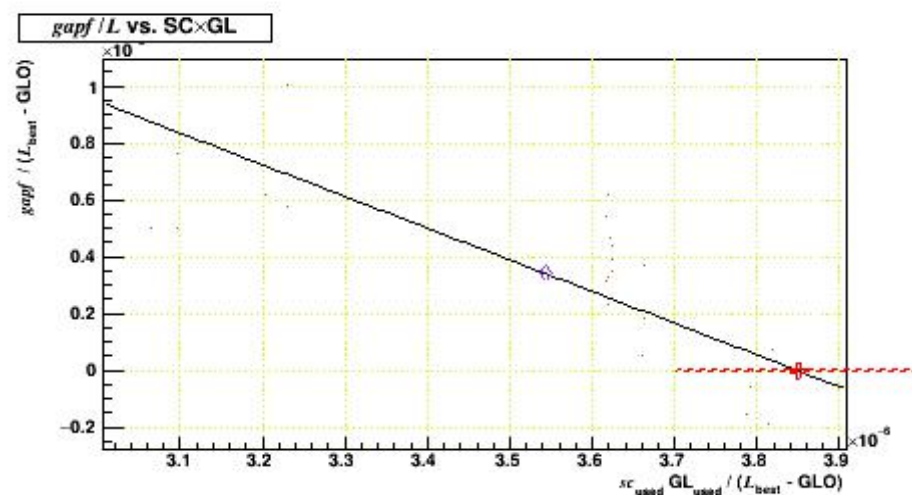


Fitting Result ($GL = 14.65$)

adjusted *gapf* vs. *zdcx* for all sets, offset by 0.05



Fitting Result ($GL = 14.65$)



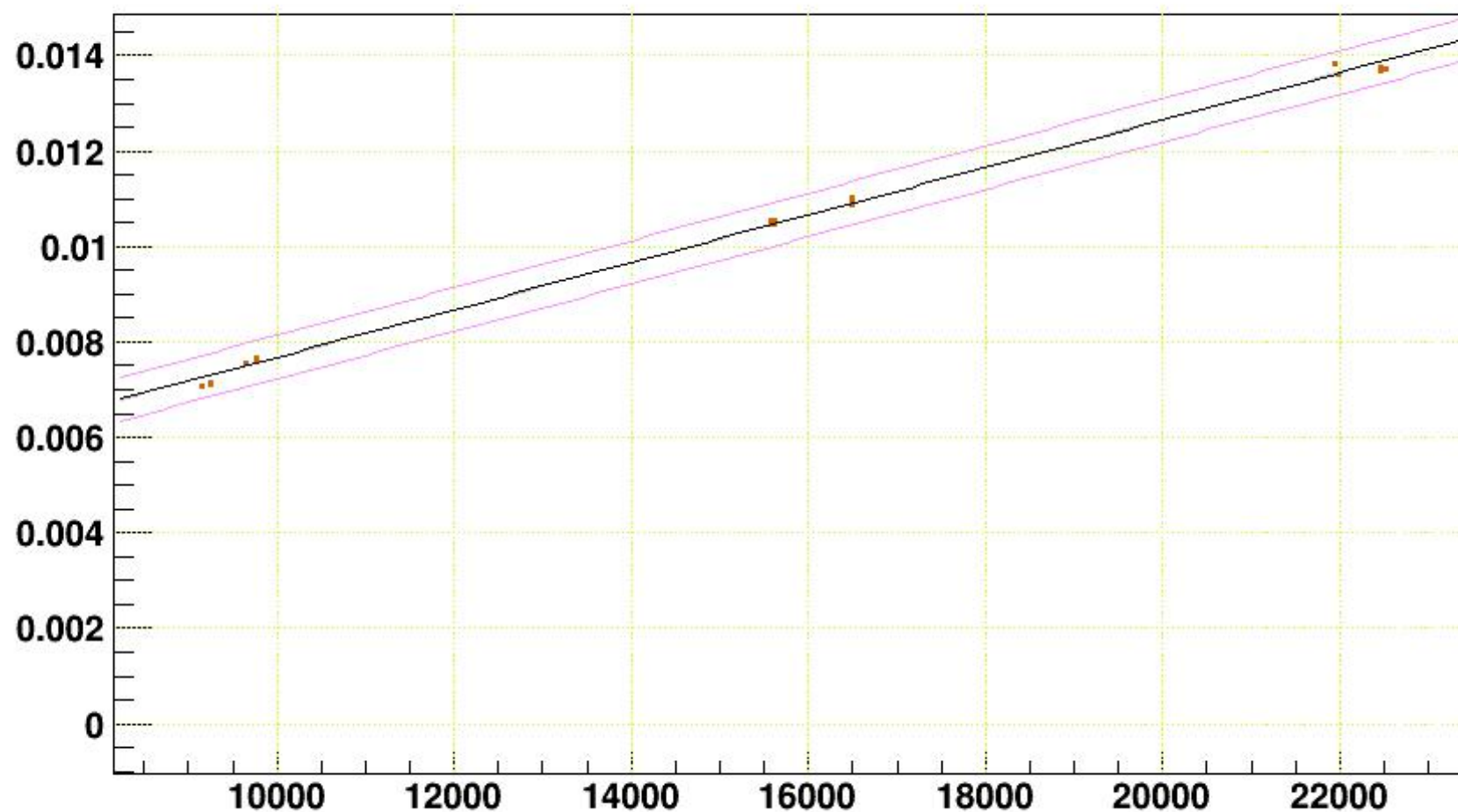
Sat Feb 16 02:36:48 2019

Fitting Result (GL = 14.65)

- $sc = (6.209e-07 \pm 9.152e-09) * ((zdcx) - (-5465 \pm 316.8))$
- $GL = 6.20 \pm 0.18$

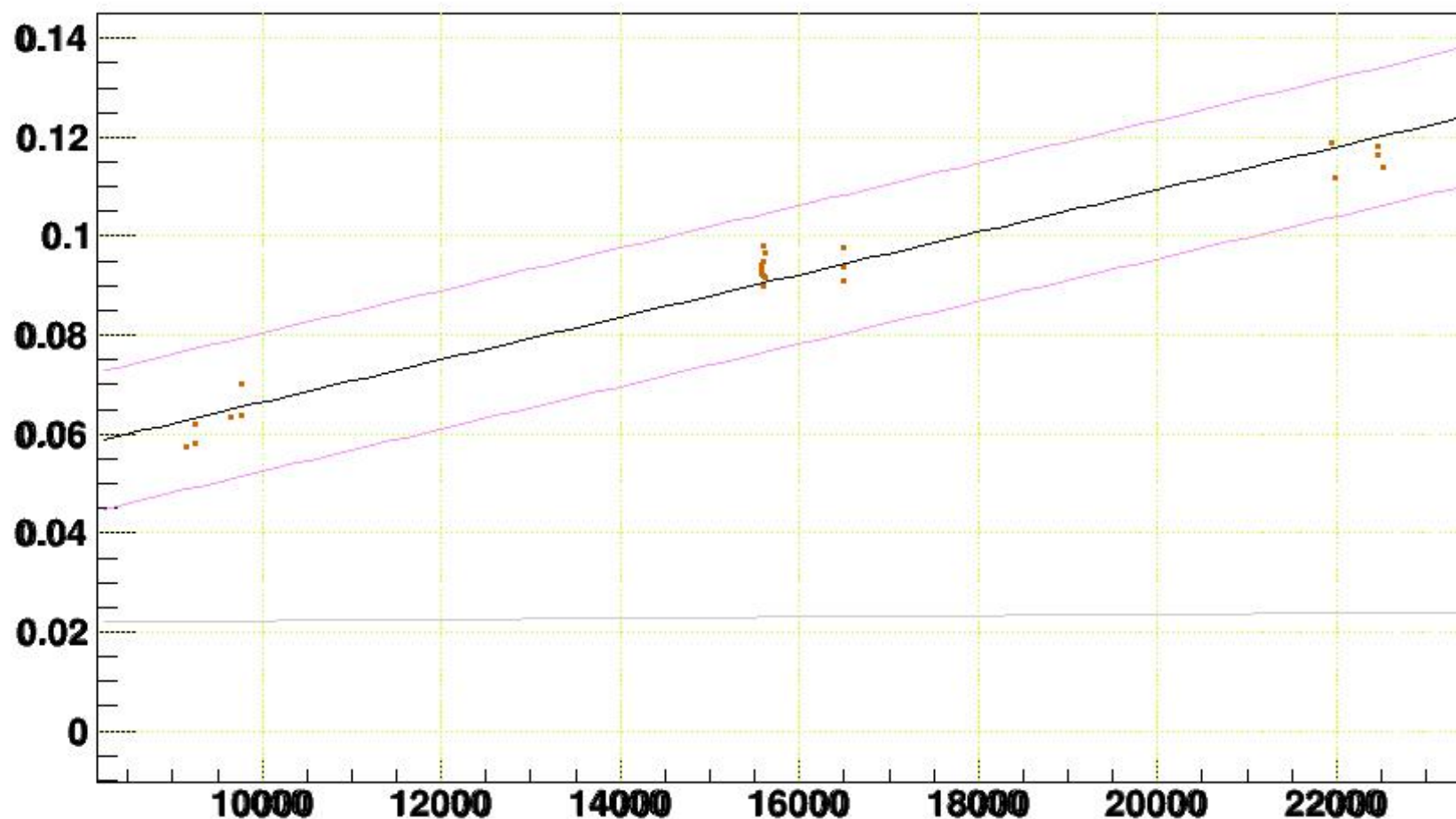
Fitting Result ($GL = 15.65$)

sc vs. *zdcx* for all sets, offset by 0.004

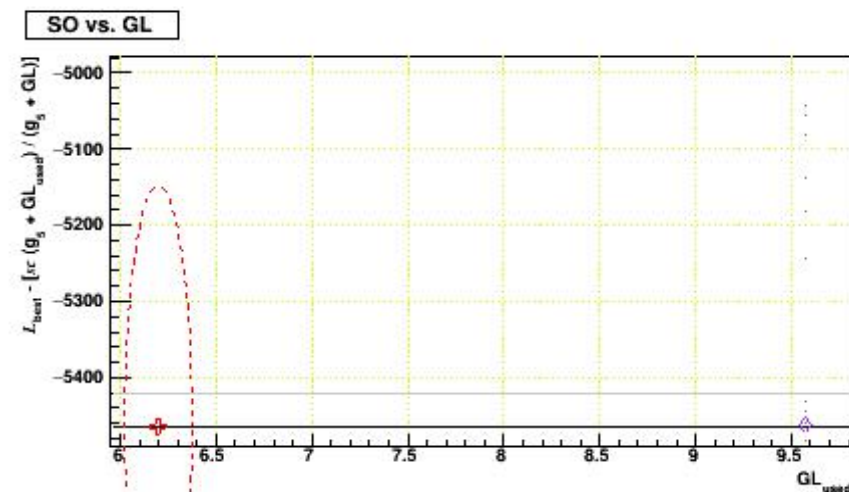
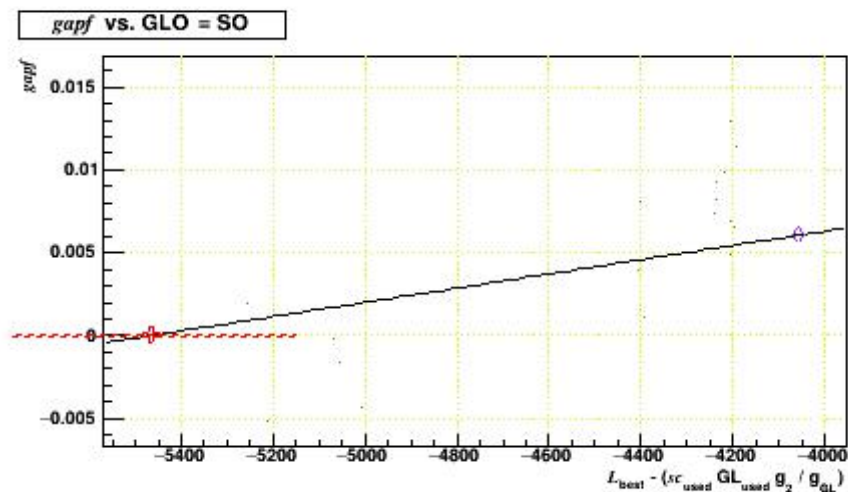
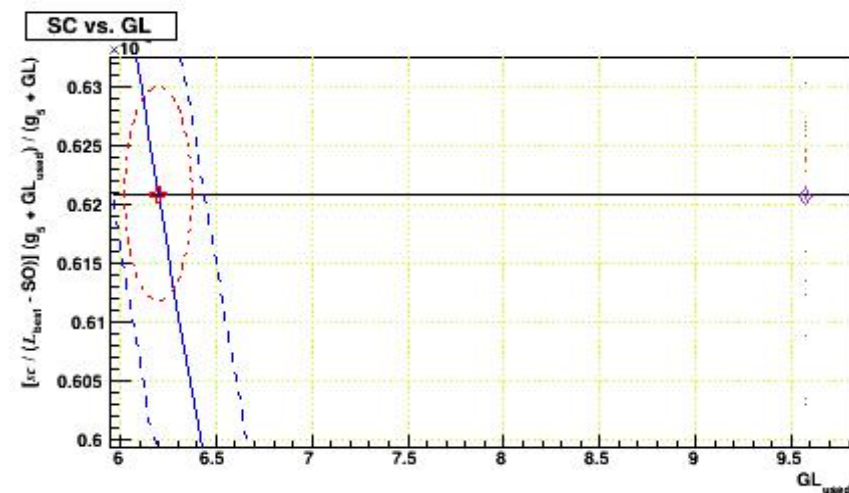
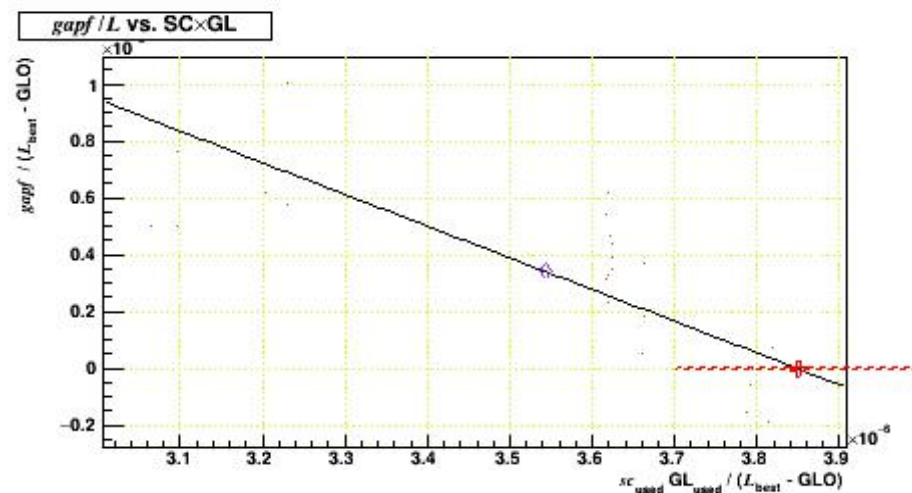


Fitting Result ($GL = 15.65$)

adjusted *gapf* vs. *zdcx* for all sets, offset by 0.05



Fitting Result ($GL = 15.65$)



Sat Feb 16 02:38:48 2019

Fitting Result (GL = 15.65)

- $sc = (6.25e-07 \pm 9.088e-09) * ((zdcx) - (-5756 \pm 316.6))$
- $GL = 5.67 \pm 0.16$

How To Evaluate the Fitting Results

