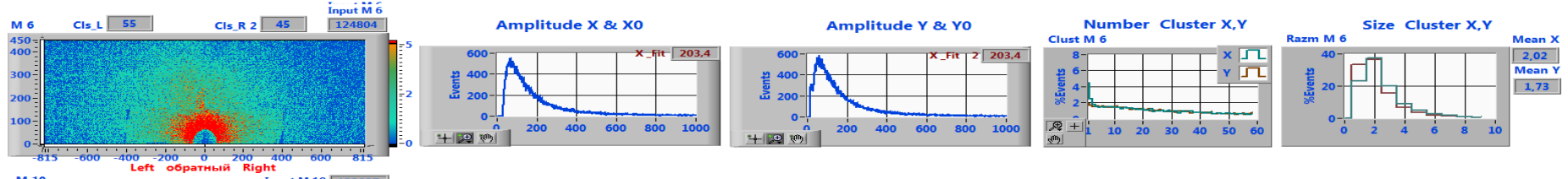


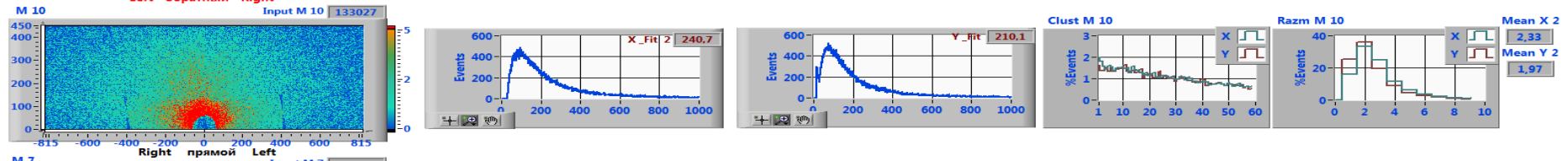
GEMs и CSCs в 8 сеансе BM@N

# Top Gem's Run 7724 I=430 mka

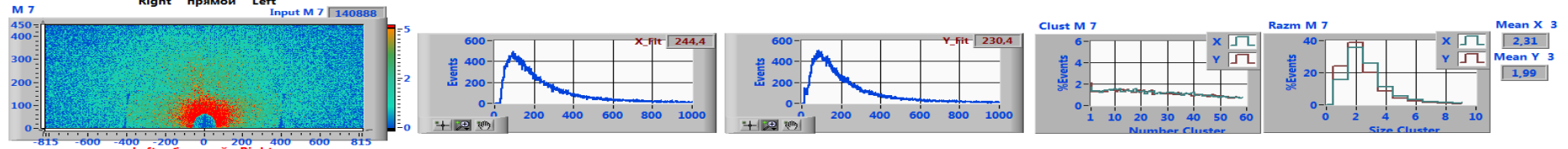
6



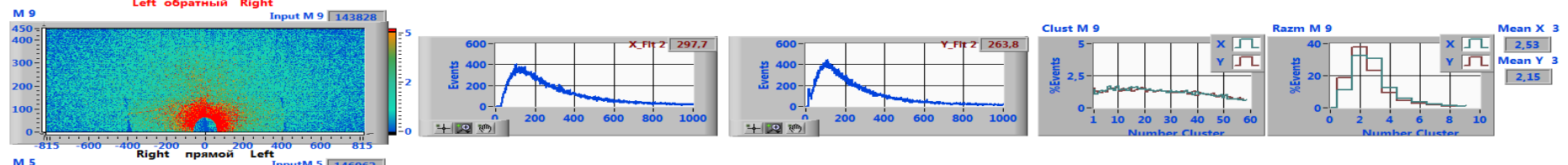
10



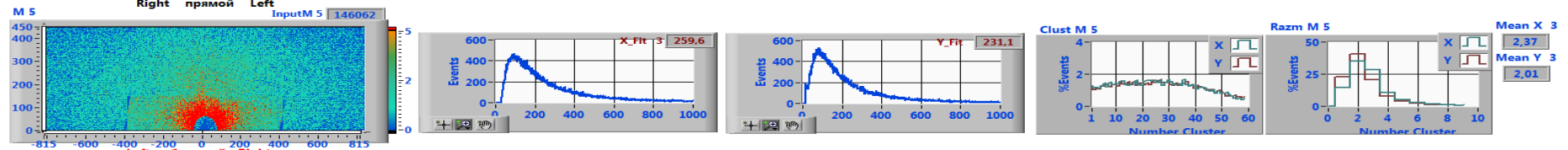
7



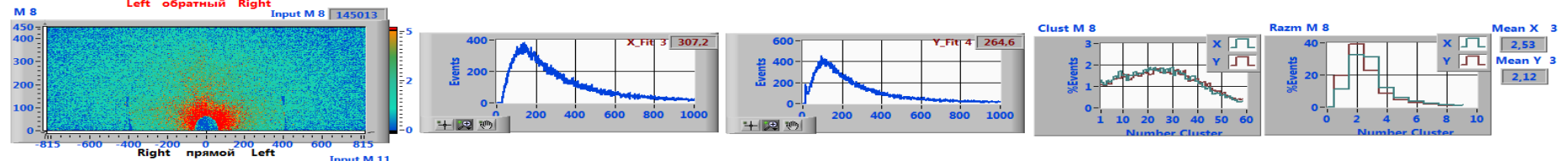
9



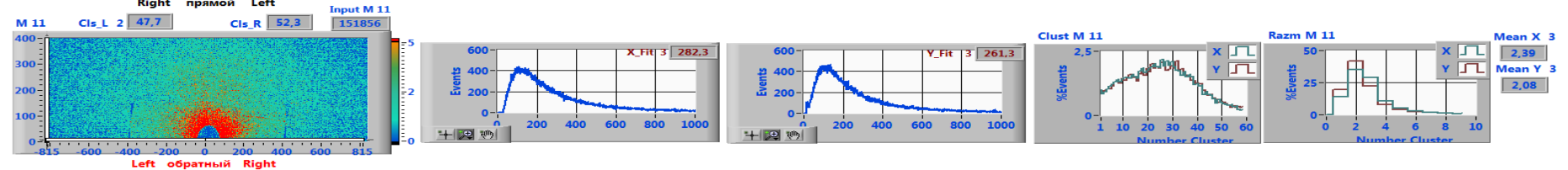
5



8

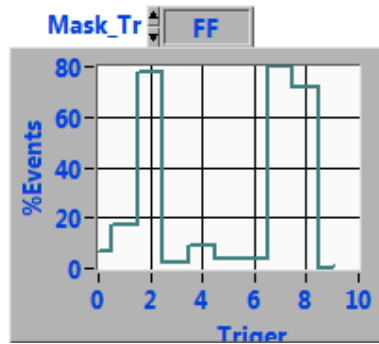
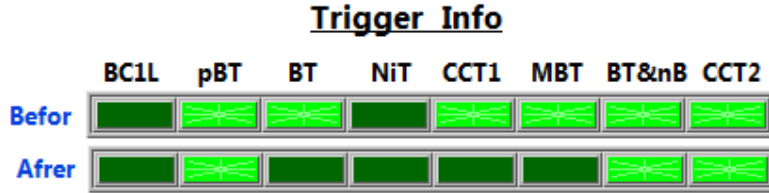


11

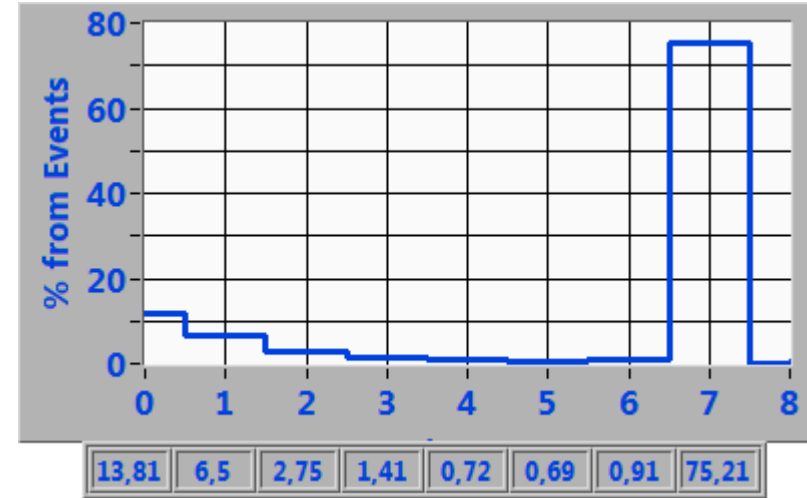


# Триггер и эффективность Gem

## Mask FF All triggers

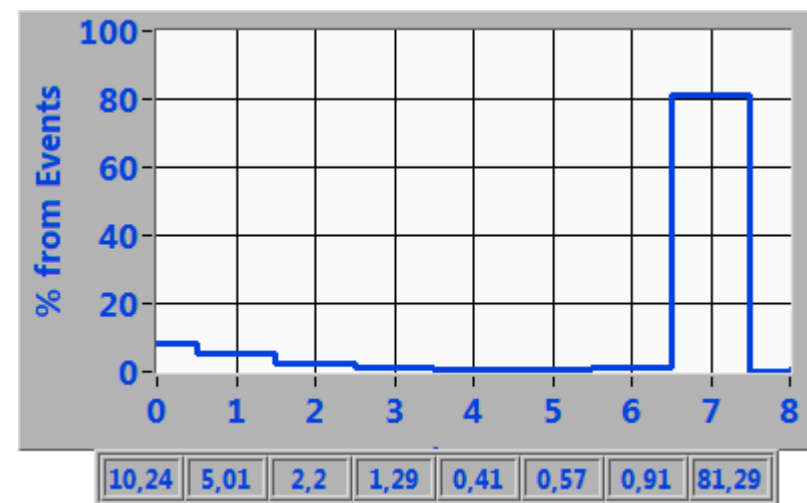


	Effect
Gem 6	79,7
Gem10	78,8
Gem 7	79,4
Gem 9	79,3
Gem5	79,4
Gem8	79,6
Gem11	78,4



## Mask 80 CCT2 triggers

	Effect
Gem 6	84,9
Gem10	84,3
Gem 7	84,8
Gem 9	84,6
Gem5	84,8
Gem8	84,9
Gem11	83,9

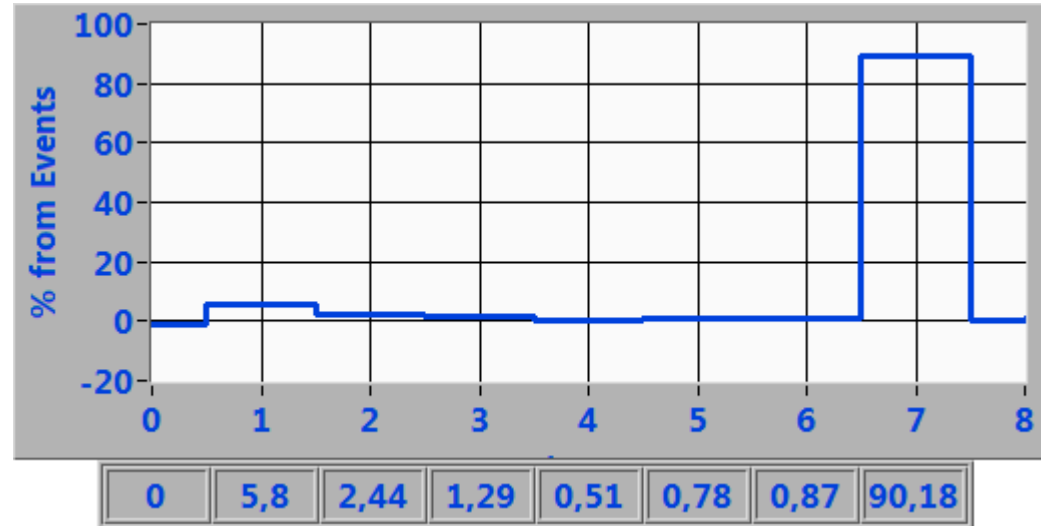


# Эффективность Gem

1. Триггер CST2

2. Триггер эффективен, если срабатывает хотя бы 1 Gem ( NclsX & NclsY >= 1)

	Left	Right	L & R	L or R
Gem 6	90,5	90,3	87,1	92,4
Gem10	90,2	89,8	87,8	92,6
Gem 7	91,2	91,0	87,6	92,1
Gem 9	90,6	90,8	88,6	92,0
Gem5	90,1	91	88,6	92,0
Gem8	91,1	90,9	88,9	92,4
Gem11	90,2	90,8	88,3	92,8



Неэффективность триггера CST2 - 10,24 %

# Top Gem`s Run 7724 I=430 mka

# Top Gem`s Run 8805 I=440 mka

Amplitude X & X0

Amplitude Y & Y0

Size Cluster X,Y

Mean

Mean 2

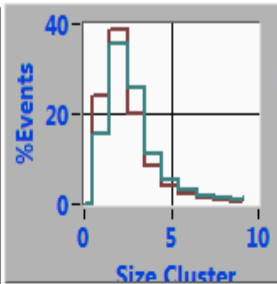
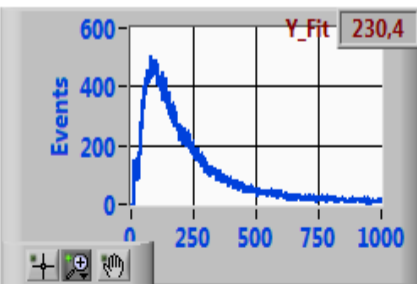
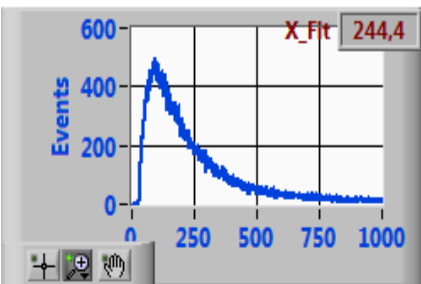
Amplitude X & X0

Amplitude Y & Y0

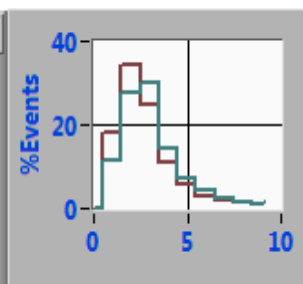
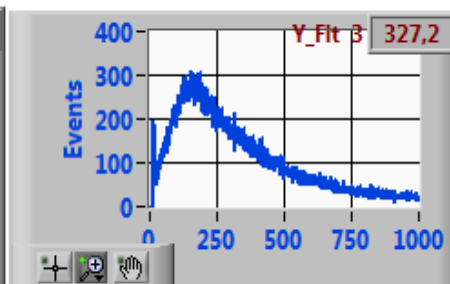
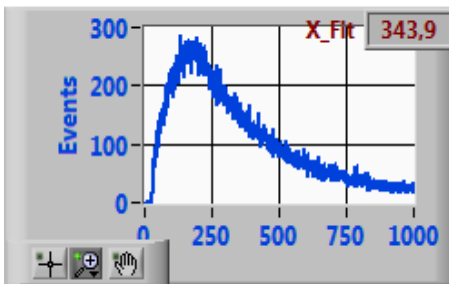
Size Cluster X,Y

Mean X

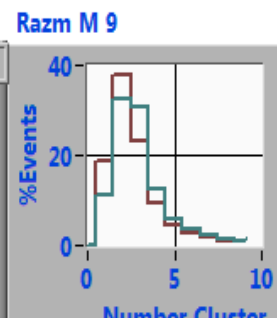
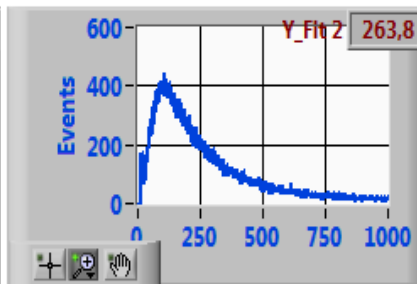
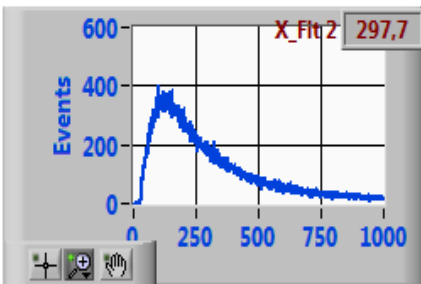
Mean Y



2,31  
1,99



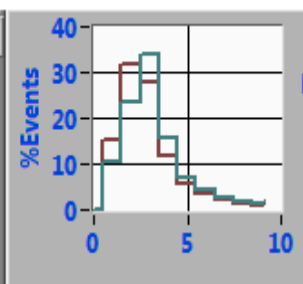
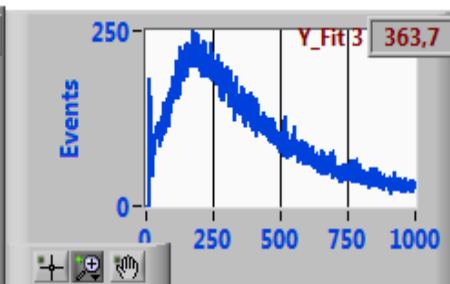
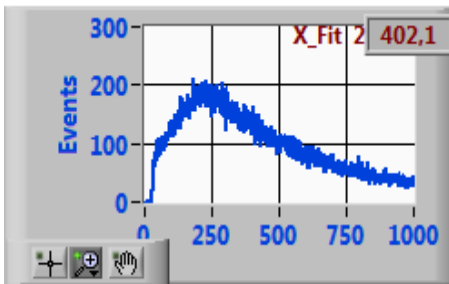
2,66  
2,26



Mean X

Mean Y

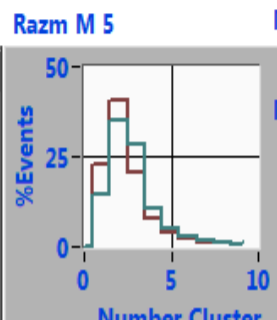
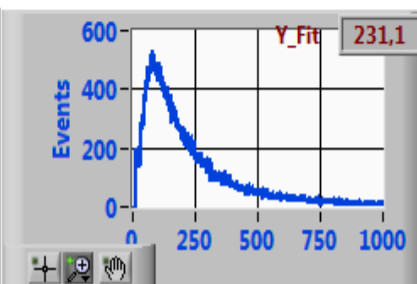
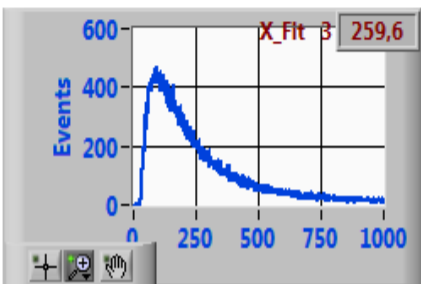
2,53  
2,15



Mean X 2

Mean Y 2

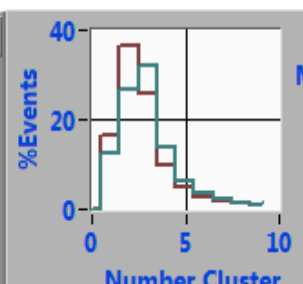
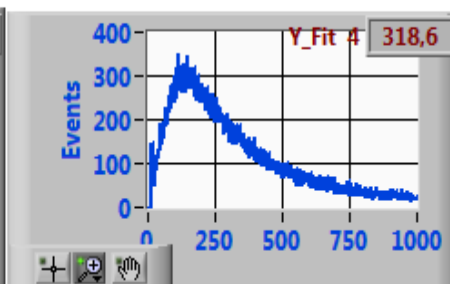
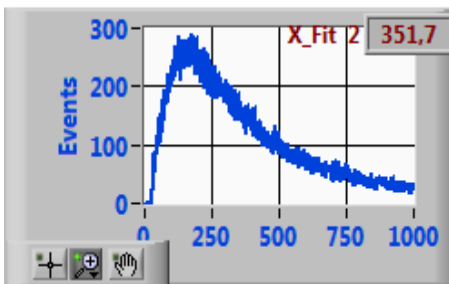
2,8  
2,43



Mean X 2

Mean Y 2

2,37  
2,01



Mean X 2

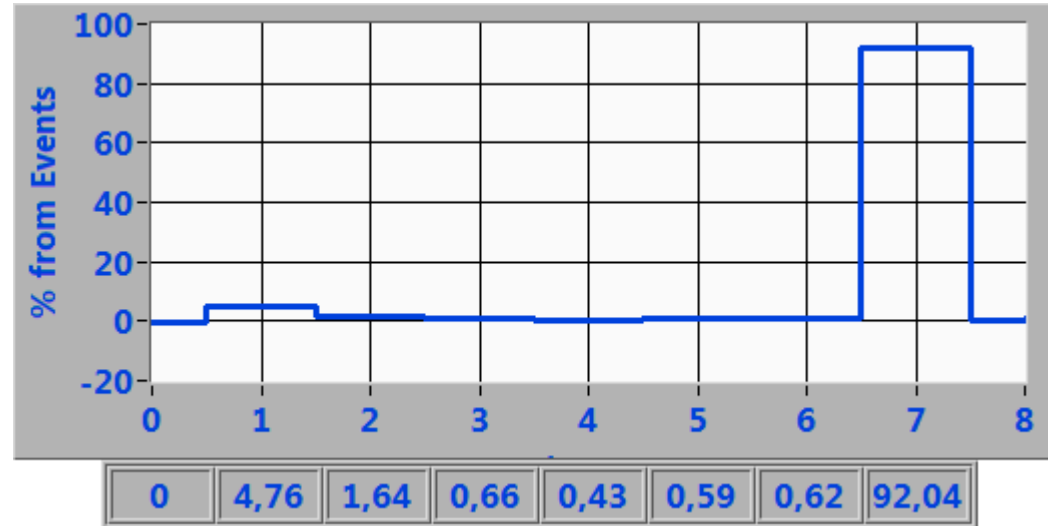
Mean Y 3

2,65  
2,26

## 1. Триггер CST2

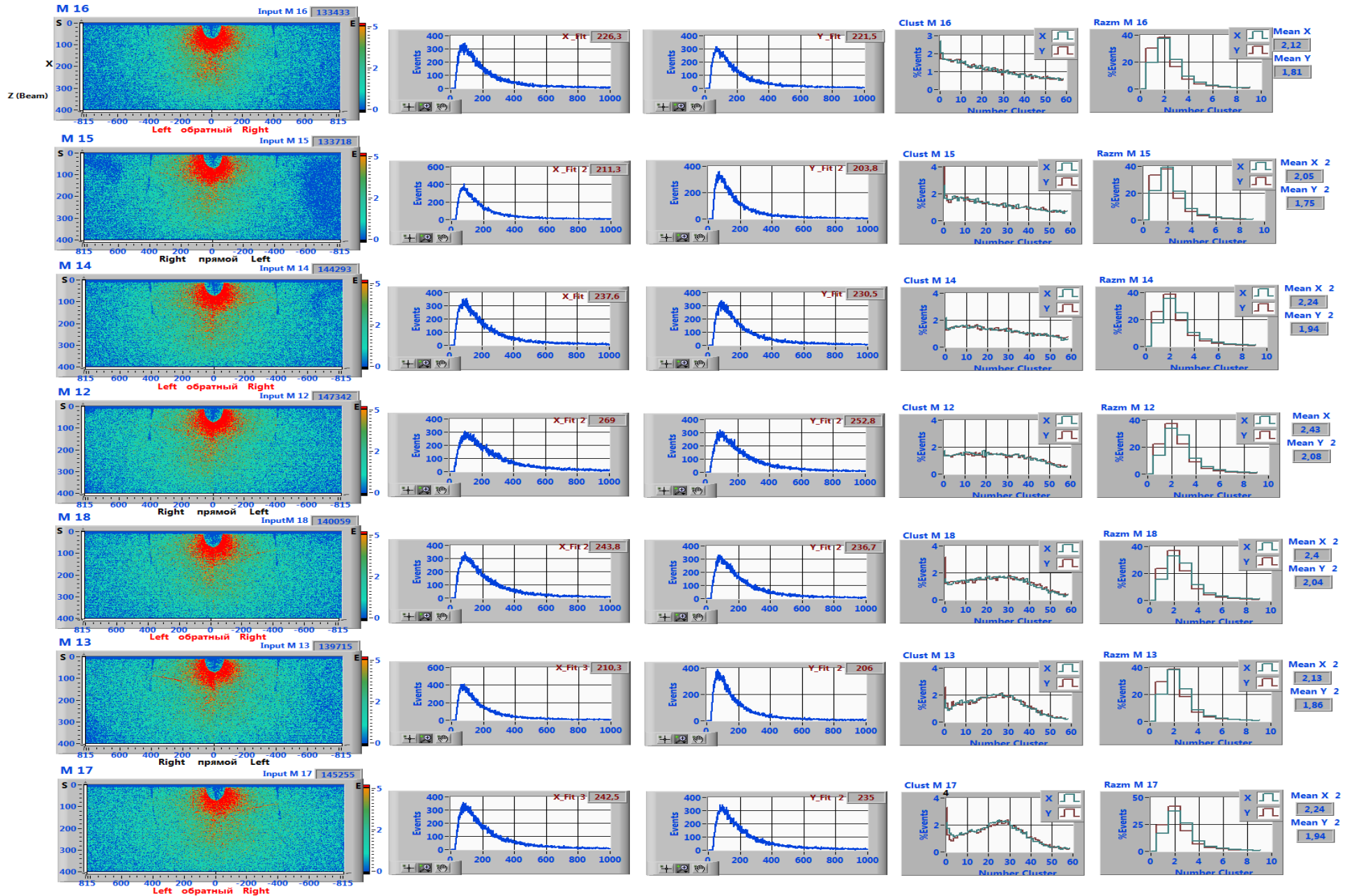
2. Триггер эффективен, если срабатывает хотя бы 1 Gem ( NclsX & NclsY >= 1)

	Left	Right	L & R	L or R
Gem 6	90,3	92,3	88,9	94,4
Gem10	92,2	91,8	90,5	94,6
Gem 7	92,5	92,8	90,7	95,7
Gem 9	93,6	92,8	90,7	95,1
Gem5	91,9	93,4	90,7	95,0
Gem8	93,1	92,6	91,2	95,2
Gem11	92,2	93,8	91,1	95,5



Неэффективность триггера CST2 - 8,49 %

# Bot Gem`s Run 7724 I=430 mka

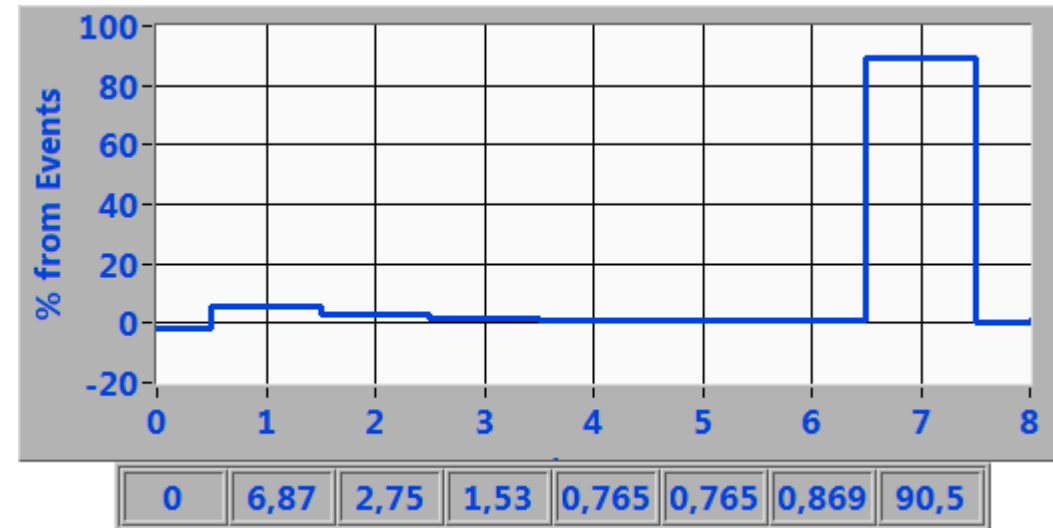


# Эффективность Gem

1. Триггер CST2

2. Триггер эффективен, если срабатывает хотя бы 1 Gem (  $N_{clsX} \& N_{clsY} \geq 1$  )

	Left	Right	L & R	L or R
Gem 16	90,5	90,3	87,1	93,4
Gem 15	90,2	89,8	87,8	92,6
Gem 14	91,2	91,0	87,6	93,1
Gem 12	90,6	90,8	88,6	93,0
Gem 18	90,1	91	88,6	93,0
Gem 13	91,1	90,9	88,9	93,4
Gem 17	90,2	90,8	88,3	92,8



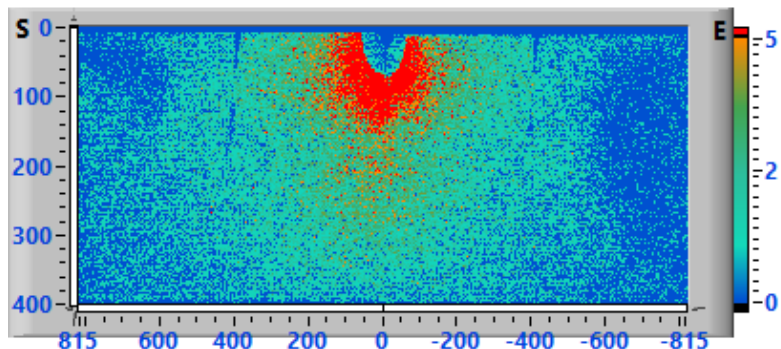
Неэффективность триггера CST2 - 10,4 %



Для повышения эффективности и улучшения работы проблемных зон Gem увеличиваем рабочий ток

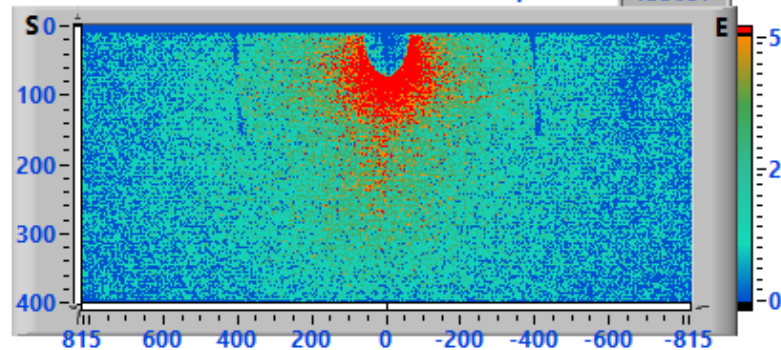
Run 7724 I= 430 мка

M 15



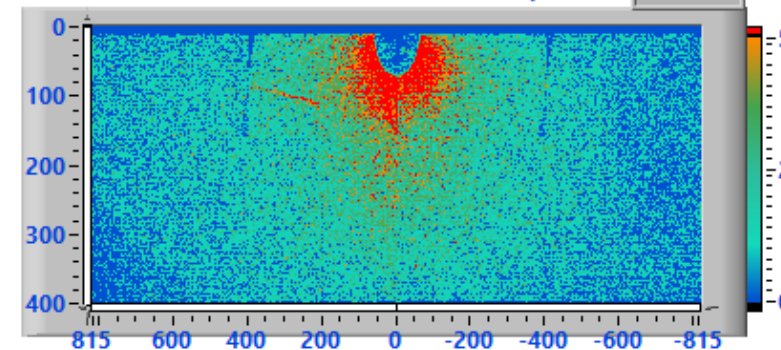
M 14

Input M 14 133057



M 13

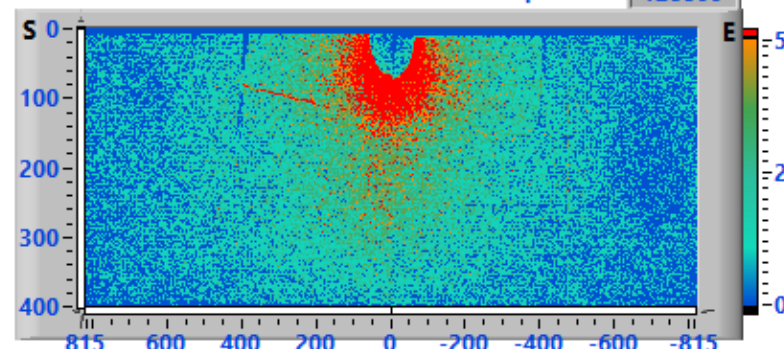
Input M 13 129346



Run 8005 I>= 440

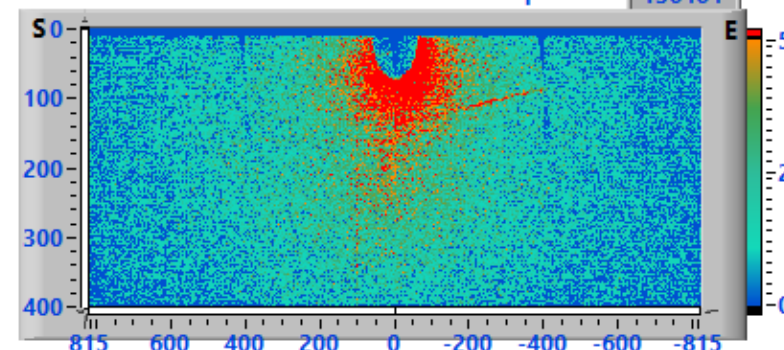
M15

input m 15 128866



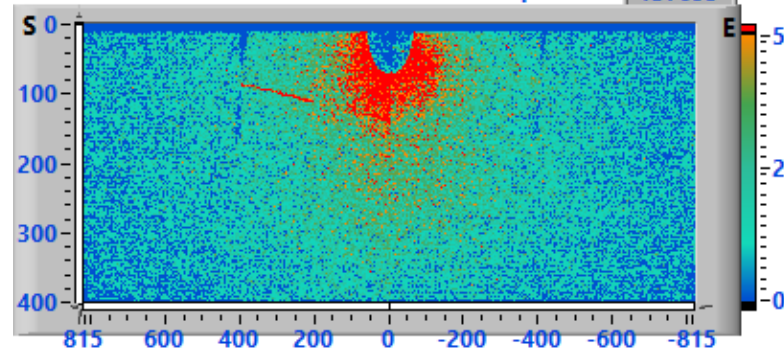
M 14

Input M 17 136464



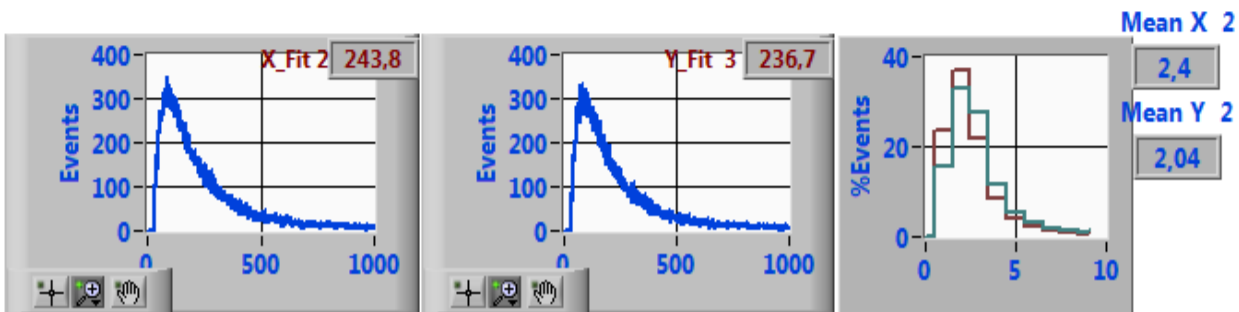
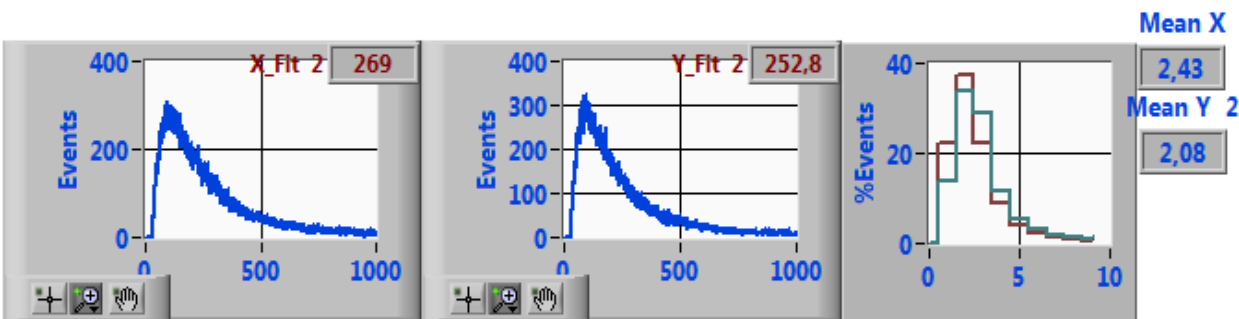
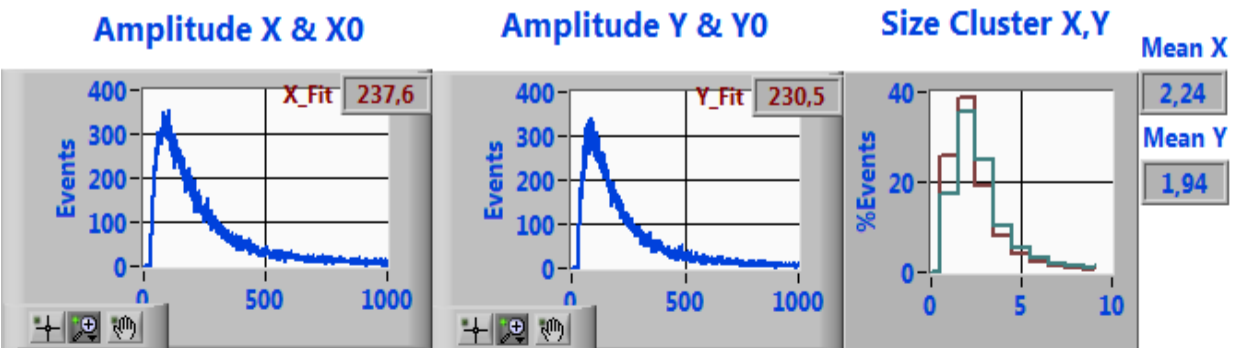
M 13

Input M 18 137695

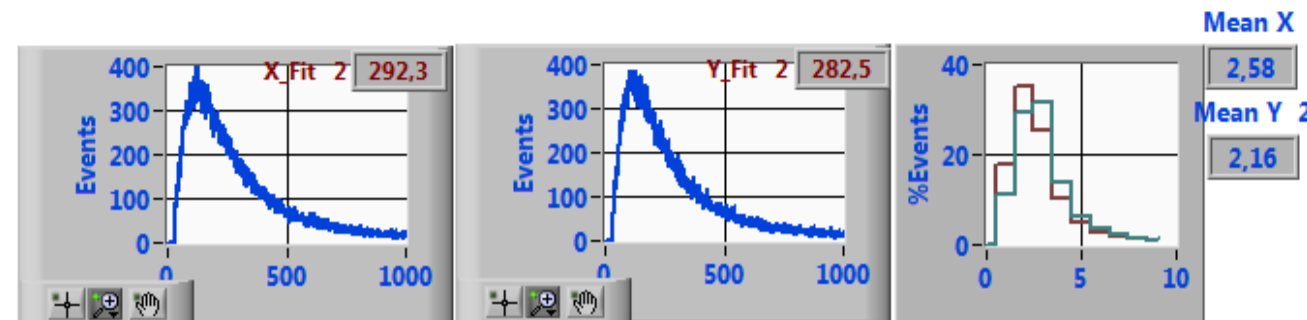
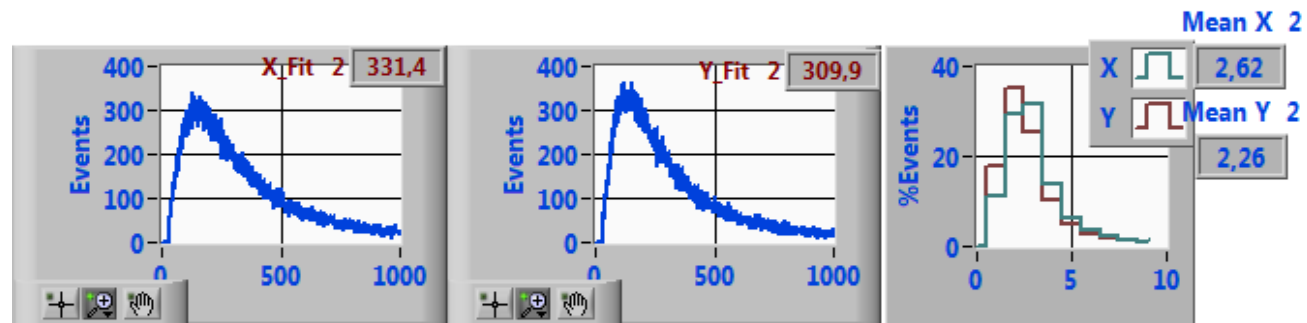
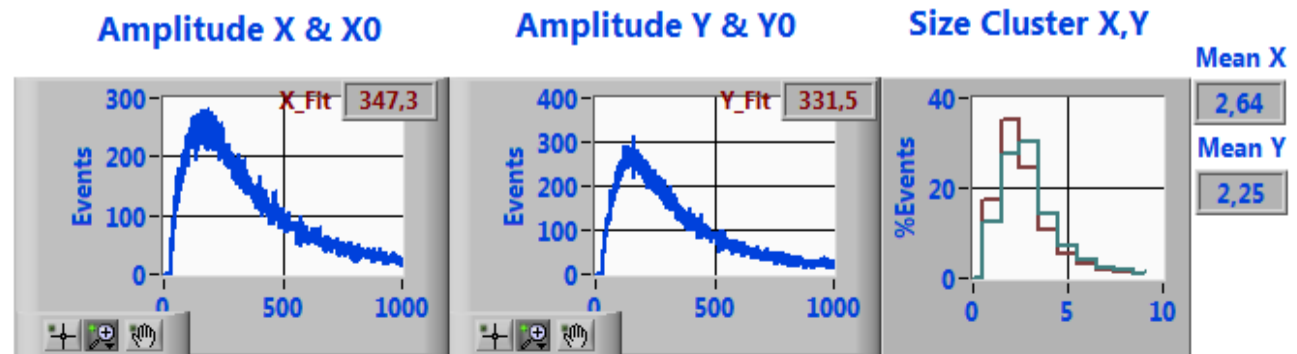


	I rab
Gem 16	440
Gem 15	448
Gem 14	445
Gem 12	440
Gem 18	440
Gem 13	445
Gem 17	445

# Top Gem`s Run 7724 I=430 mka



# Top Gem`s Run 8005 I>=440 mka

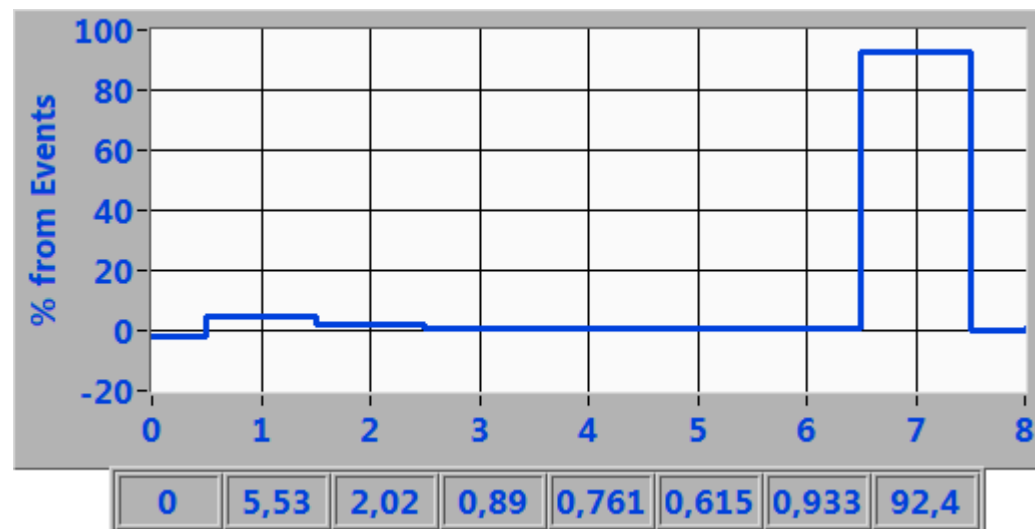


# Эффективность Gem

1. Триггер CST2

2. Триггер эффективен, если срабатывает хотя бы 1 Gem (  $N_{clsX} \& N_{clsY} \geq 1$  )

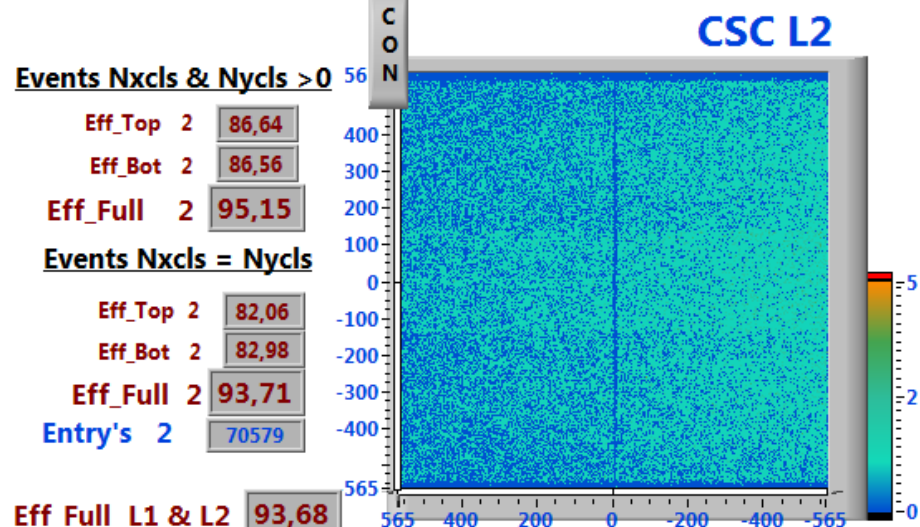
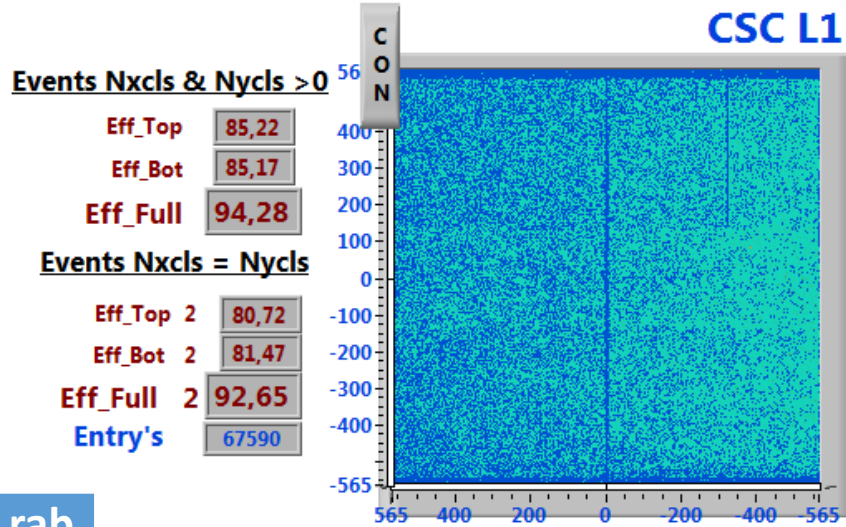
	Left	Right	L & R	L or R
Gem 16	92,5	92,3	91,1	95,3
Gem 15	93,2	93,5	90,5	96,2
Gem 14	93,2	93,5	94,6	95,6
Gem 12	94,2	92,7	93,6	95,3
Gem 18	92,7	93,8	93,2	95,2
Gem 13	94	92,5	92,5	95,1
Gem 17	93,1	93,5	93,2	95,6



Неэффективность триггера CST2 - 8,6 %

CSC

В зимнем сеансе 2022-2023

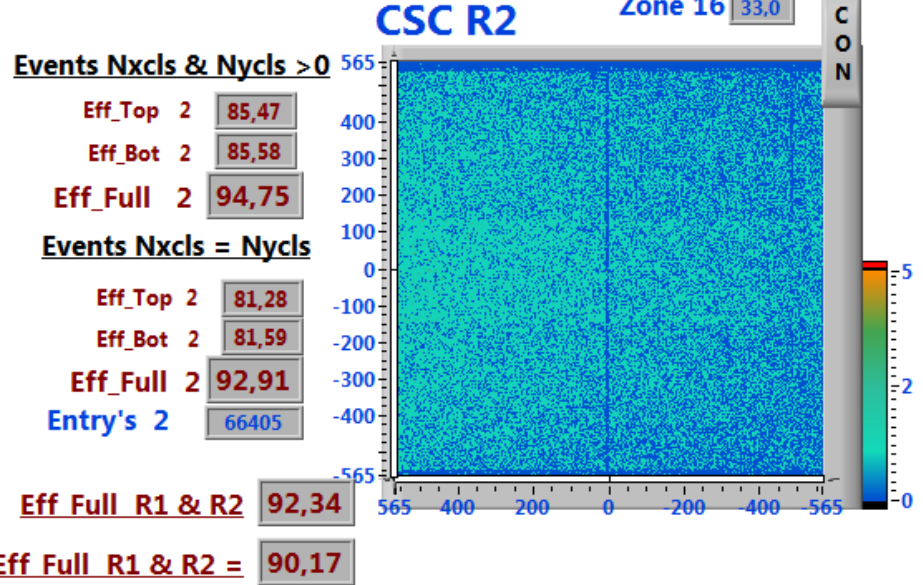
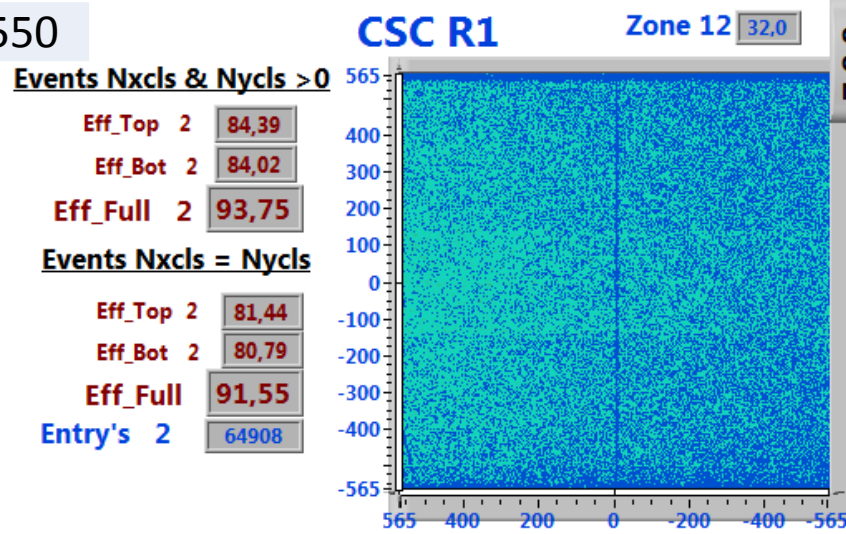


	U rab
CSC L1	2500
CSC L2	2500
CSC R1	2550
CSC R2	2550

Zone 1	35,0
Zone 2	15,0
Zone 3	15,0
Zone 4	35,0
Zone 9	35,0
Zone 10	16,0
Zone 11	17,0
Zone 12	32,0

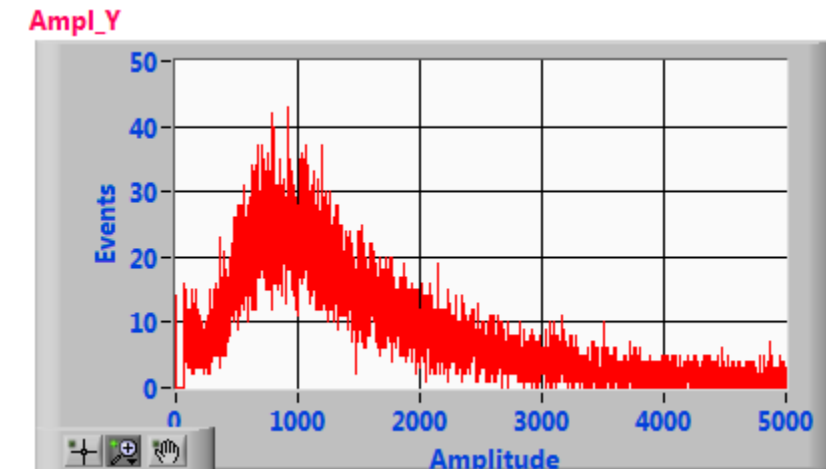
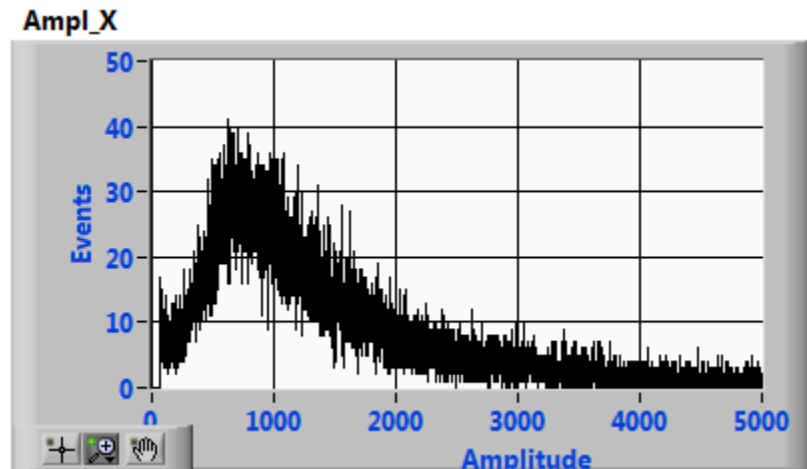
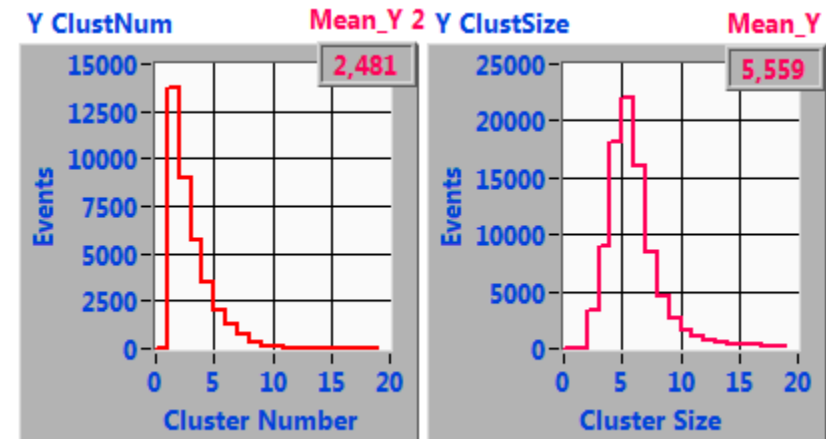
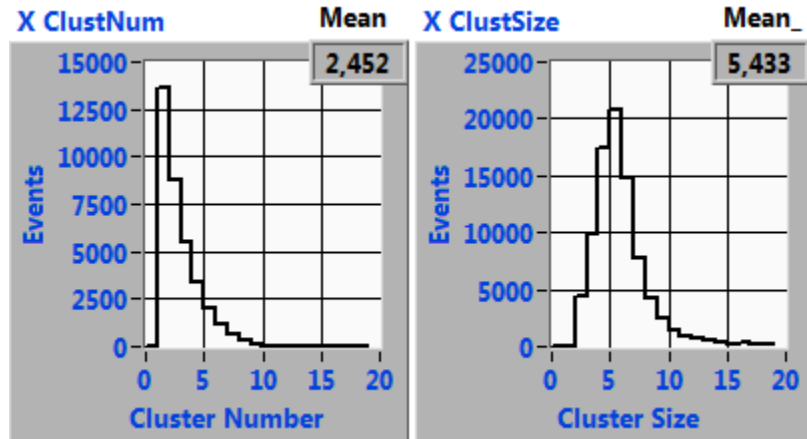
Zone 5	34,0
Zone 6	16,0
Zone 7	17,0
Zone 8	33,0
Zone 13	34,0
Zone 14	16,0
Zone 15	16,0
Zone 16	33,0

	Effect
L1	94,2
L2	95,1
R1	93,7
R2	94,8

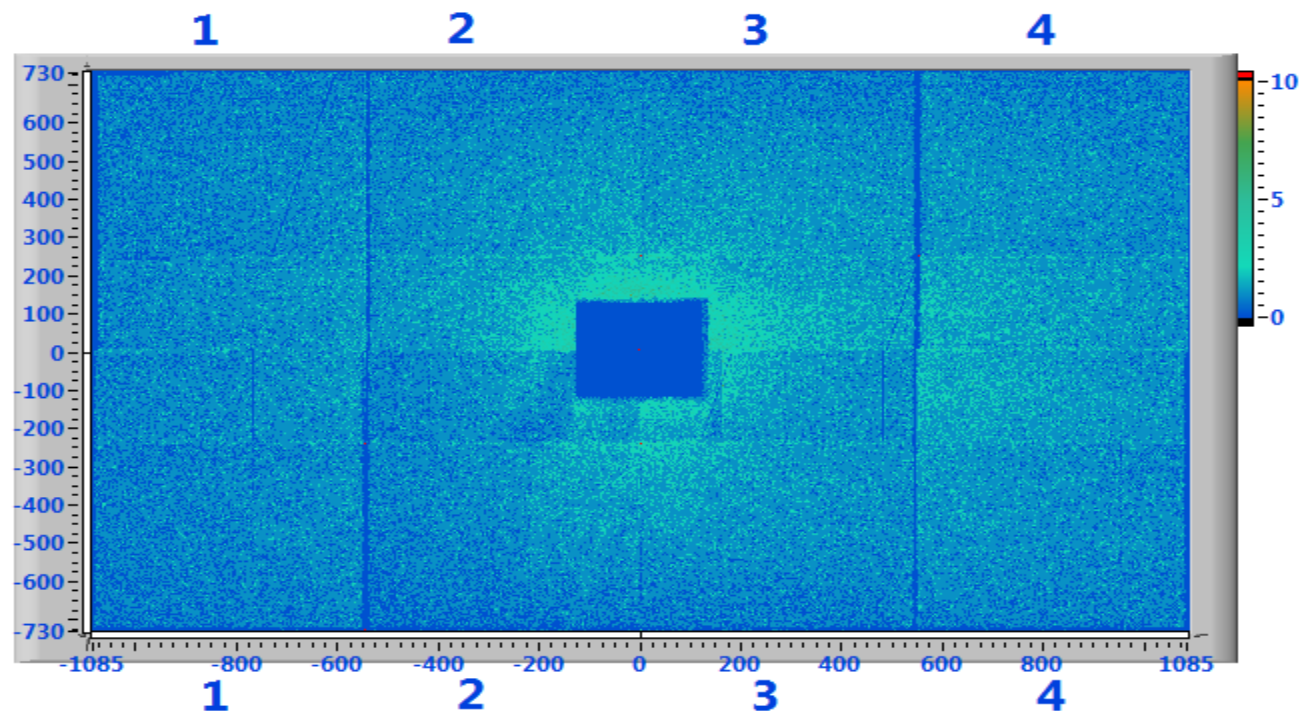


Неэффективность триггера CST2 - 17,8 %

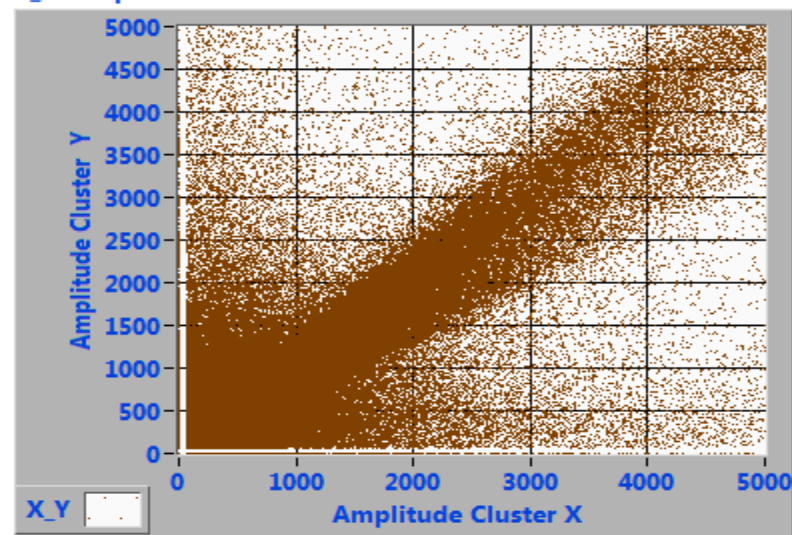
# Характеристики CSC R2 ( L1,L2,R1 имеют аналогичные значения )



# Работа большой CSC



X\_Y Ampl



No\_Eff\_Trig

Events Nclx  $\geq 1$  & Ncly  $\geq 1$

Eff\_Top

Eff\_Bot

Eff\_Full

Events Nclx = Ncly

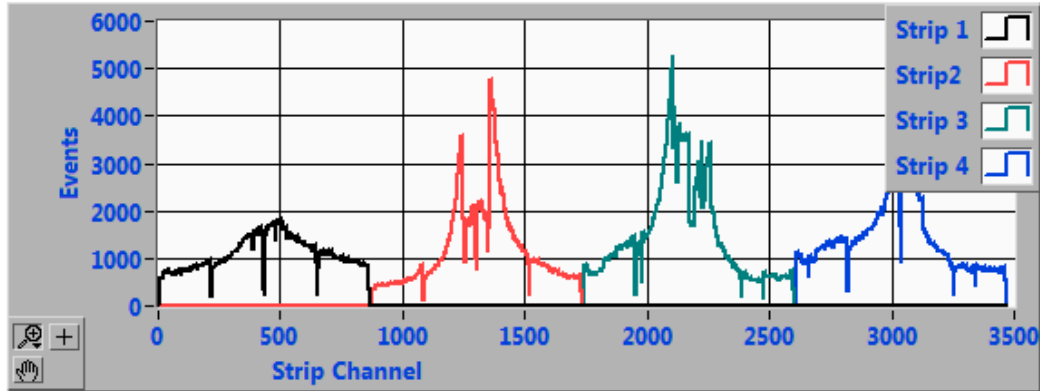
Eff\_Top 2

Eff\_Bot 2

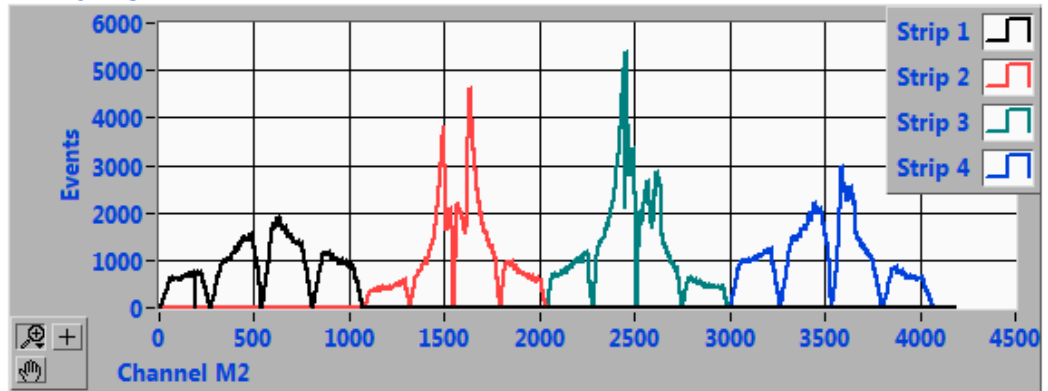
Eff\_Full 2

# Характеристике большой CSC

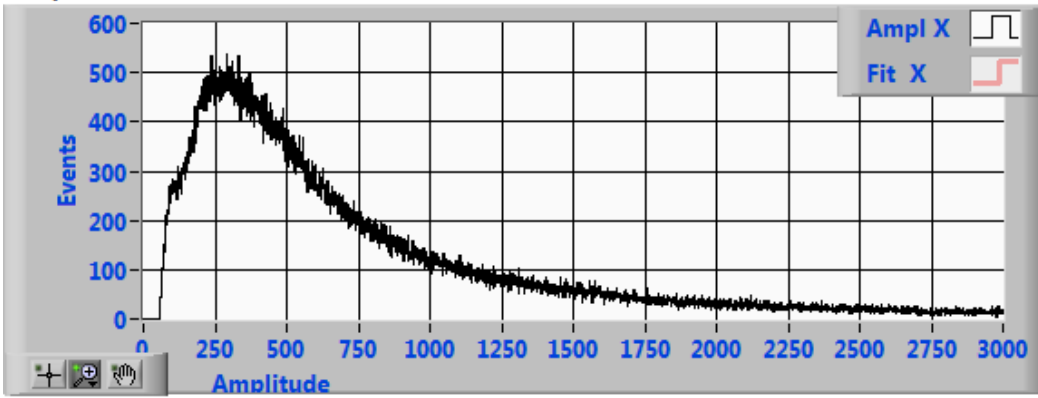
Occupancy X



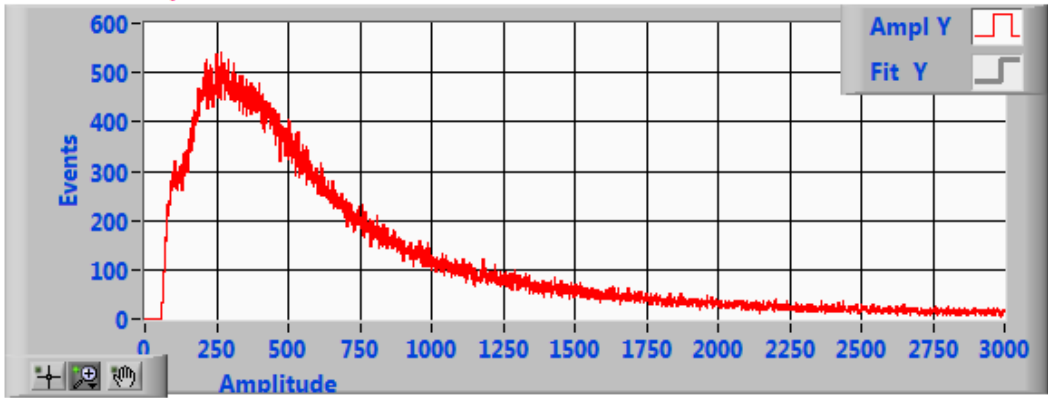
Occupancy Y



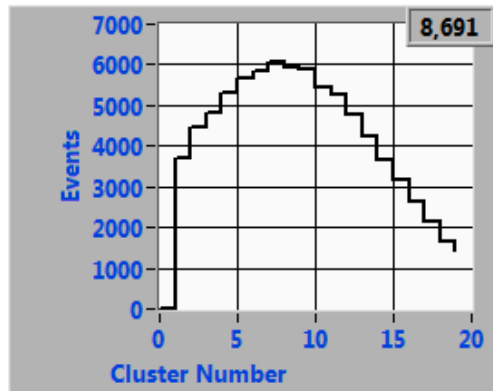
Ampl\_X



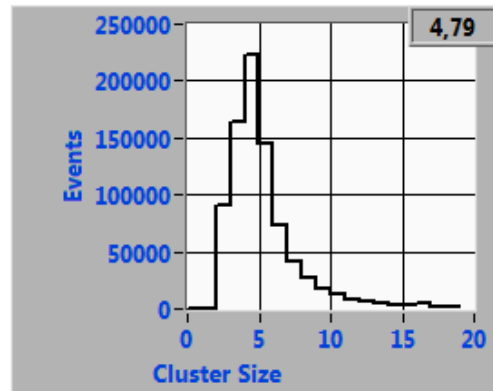
Ampl\_Y



X ClustNum

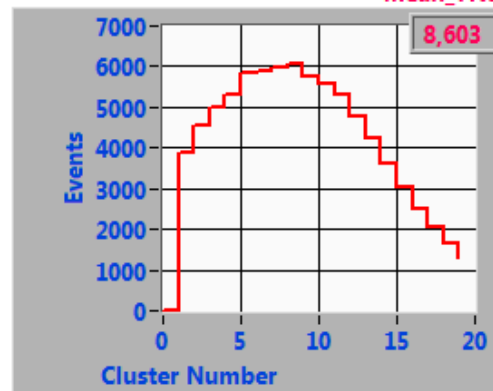


Mean\_XNum

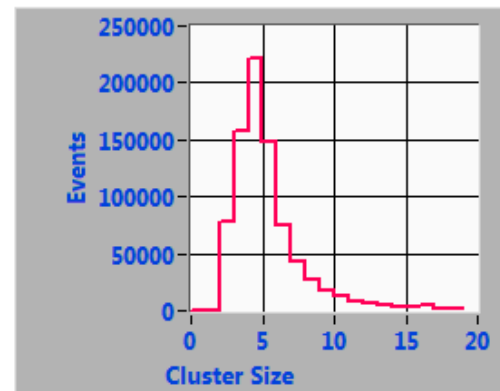


Mean\_XSize

Y ClustNum



Mean\_YNum



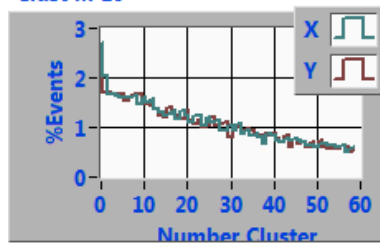


## Проблемы

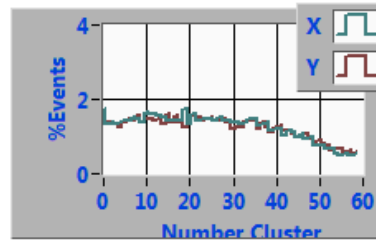
1. Протестировать верхний Gem M7 по HV и на космике.
2. Понять причину неэффективных областей в нижних Gem.
3. Протестировать нижний Gem M15 по HV и на космике.
4. Подготовить и протестировать новую большую CSC.

# Кластеры

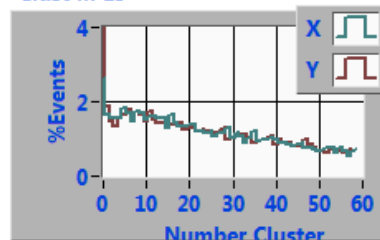
Clust M 16



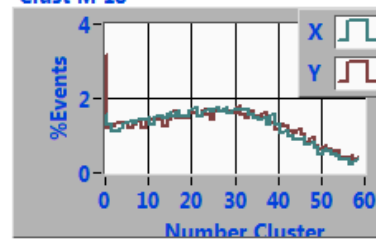
Clust M 12



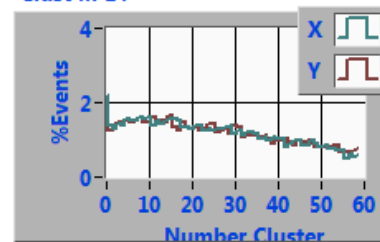
Clust M 15



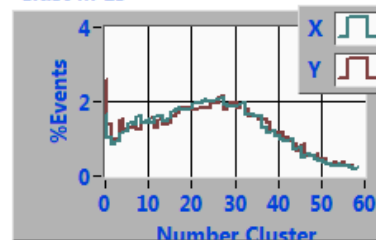
Clust M 18



Clust M 14



Clust M 13



Clust M 17

