



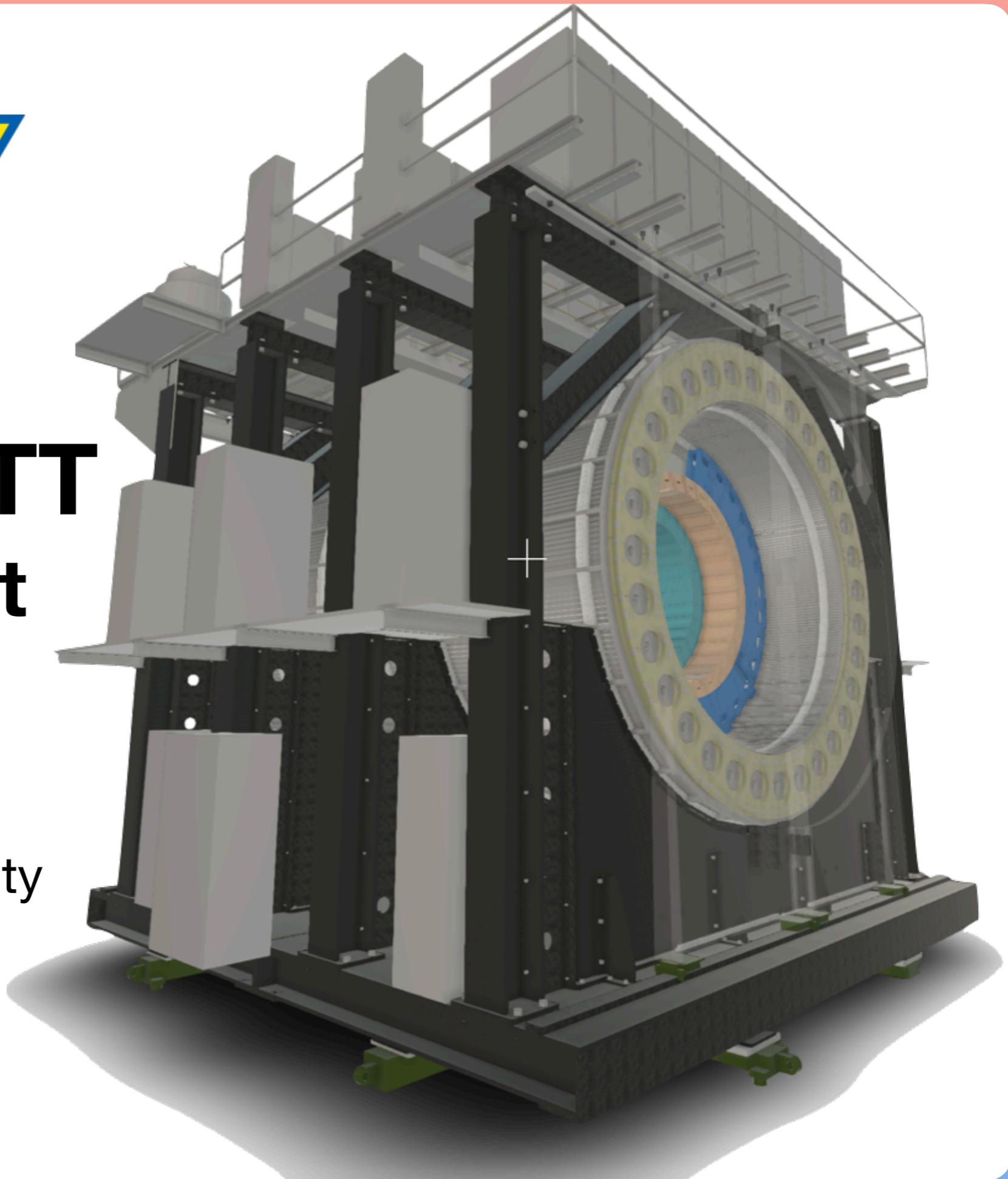
SPHENIX INTT

- Weekly Report

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2021/9/15



Ladder assembly



15 ladders assembled in Taiwan.

10 ladders goal before 9/15 -> 9/10 complete
1 ladder will be assembled today

Cut range

Based on 10 TW ladders (66560 channels)

```
offseted_width 2.29934 to 4.03547
entry 259.531 to 376.195
entry_ampl_cut 170 to 200
mean_adc_0_numeric 29.6563 to 40.6964
threshold_position 26.3283 to 38.5307
width_rchi2_p-value 0 to 0.0000006
slope_rchi2_p-value 0 to 0.0000006
slope_value_correct 5.43298 to 8.45607
offseted_width_02 1.83801 to 4.25881
offseted_width_13 2.04854 to 4.60852
un-bonded study
```

Not use

Stave ID	Module		assembly date	Bias glue (Y/N)	calibration		
	N	S			done ?	# bad channel	class
"01-0015"	74	262	2021/4/15	Y	Y	2463	5
"01-0060"	51	264	2021/04/28	Y	Y	144	3
"02-0028"	44	pre004	2021/07/28	Y	Y	45	2
"02-0049"	263	48	2021/7/29	Y	Y	0	1
"02-0052"	254	49	2021/8/3	Y	Y	0	1
"02-0046"	255	257	2021/8/5	Y	Y	1	1
"02-0039"	77	78	2021/8/23	Y	Y	2	1
"02-0040"	73	71	2021/8/26	Y	Y	6	1
"02-0019"	53	54	2021/8/27	Y	Y	0	1
"02-0016"	52	55	2021/8/31	Y	Y	3	1
"02-0013"	58	59	2021/09/01	Y	Y	0	1
"02-0001"	253	256	2021/09/02	Y	Y	0	1
"02-0074"	76	261	2021/9/8	Y			
"02-0080"	24	258	2021/9/9	Y			
"02-0077"	57	259	2021/9/13	Y			

• Summary (based on 9 criteria) :

- Class 1 : 9 ladders
- Class 2 : 1 ladder
- Class 3 : 1 ladder
- Class 5 : 1 ladder

3 ladders will be test this week

Stave, HDI & Half-Ladder



- The fraction of staves we were able to pass the torque test : 16 /16 (after applying new method to apply DP460).
- 7 Remaining staves (all barrel-2) :
 - 6 : good in flatness, haven't applied DP460
 - 1 : passed all tests.

HDI in Taiwan
(hasn't been used)

Batch-1	43
Batch-2	3
Batch-3	35

We used Batch-2 first

Half-ladder assembly

	Good	Not yet bonded & tested
Chip to HDI	1	0
Sensor to HDI	0	1
Encapsulation	2-1*	0
Thermal cycle	6-1**	0

*One post-encapsulation half-ladder is in NWU

** pre001 for practice

7 half-ladder are good so far

Summary



- We have assembled 15 ladders so far.
 - 9 ladders are in class 1
 - 3 ladders haven't been tested.
 - We will assemble 1 ladder today.
- Assume these 3 “un-tested” ladders are in class 1.

	HDI	Stave	Ladder
requires	80	40	40
C1-Ladder	24	12	12
Half-ladder assembly	7		
Batch-2	3		
Batch-3	35		
remaining stave		7	
requirements	11	21	28

Back up



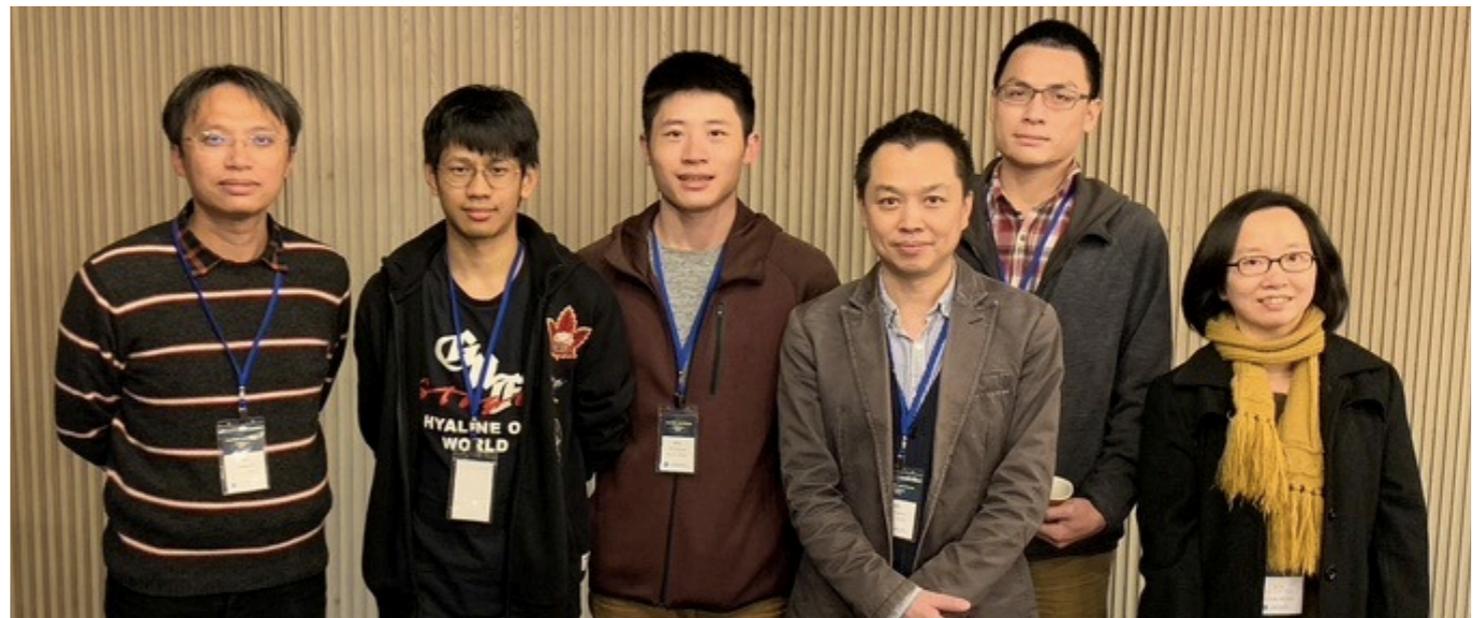
Taiwan INTT team



Ou-Wei Cheng



Kai-Yu Cheng



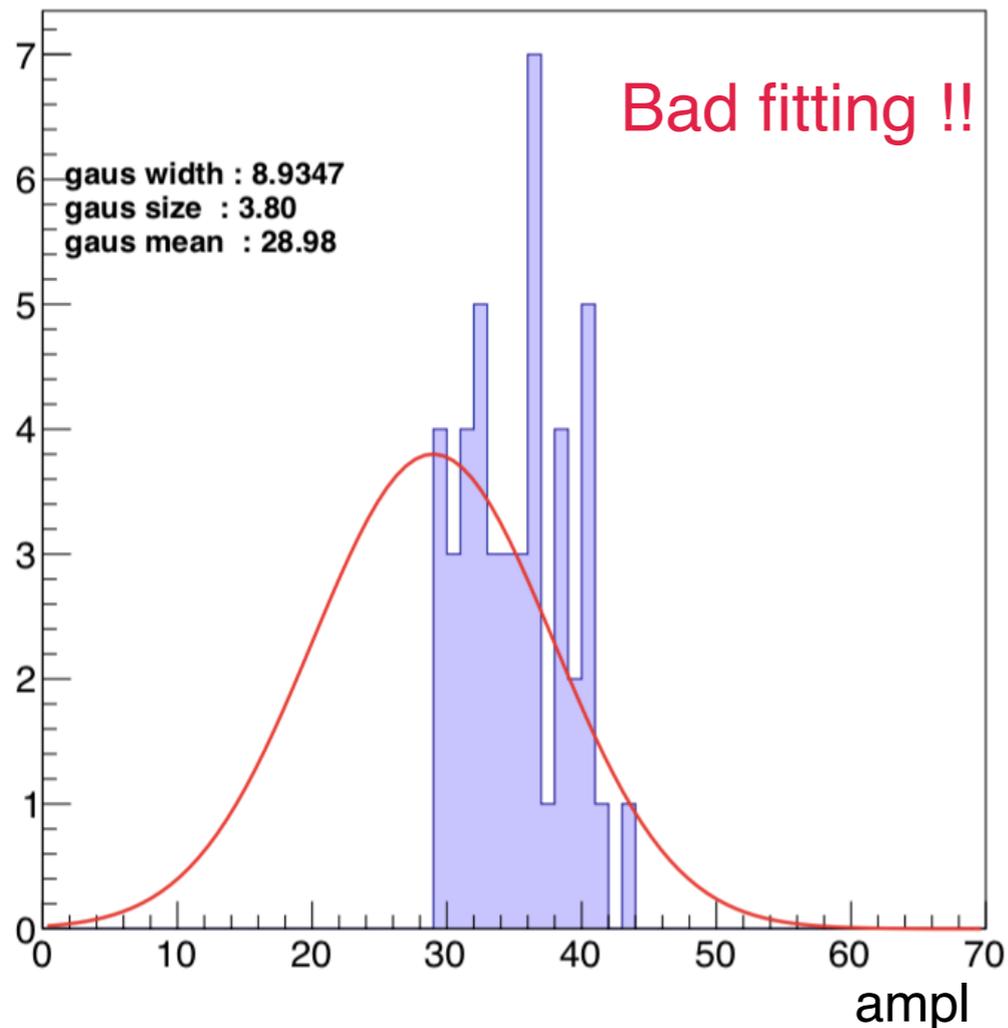
Chia-Ming Kuo Cheng-Wei Shih Lian-Sheng Tsai
Wei-Che Tang Rong-Shyang Lu Jenny Huang

Problem about adc0 criteria

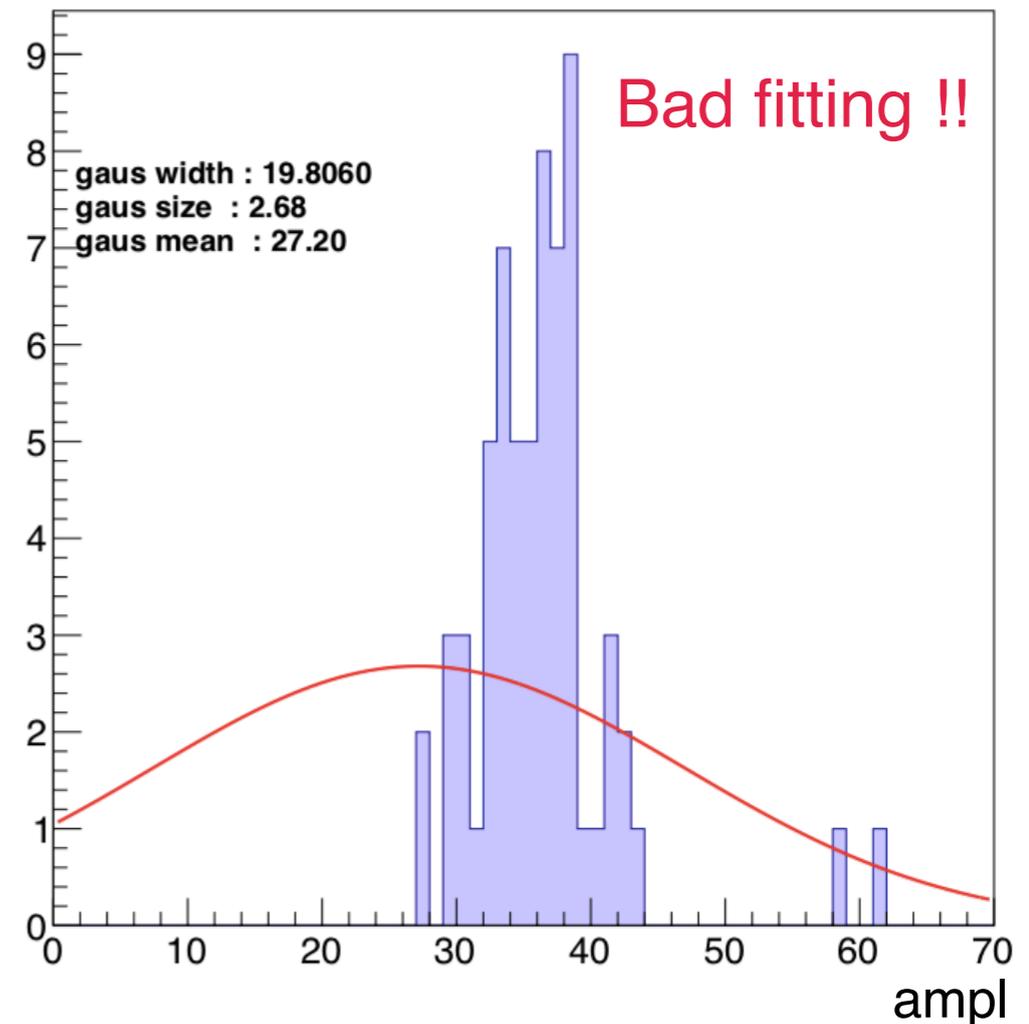


- The statistic of adc0 distribution of some channels may not be enough.

chip_id=18, chan_id = 27, ADC0



chip_id=13, chan_id = 93, ADC0

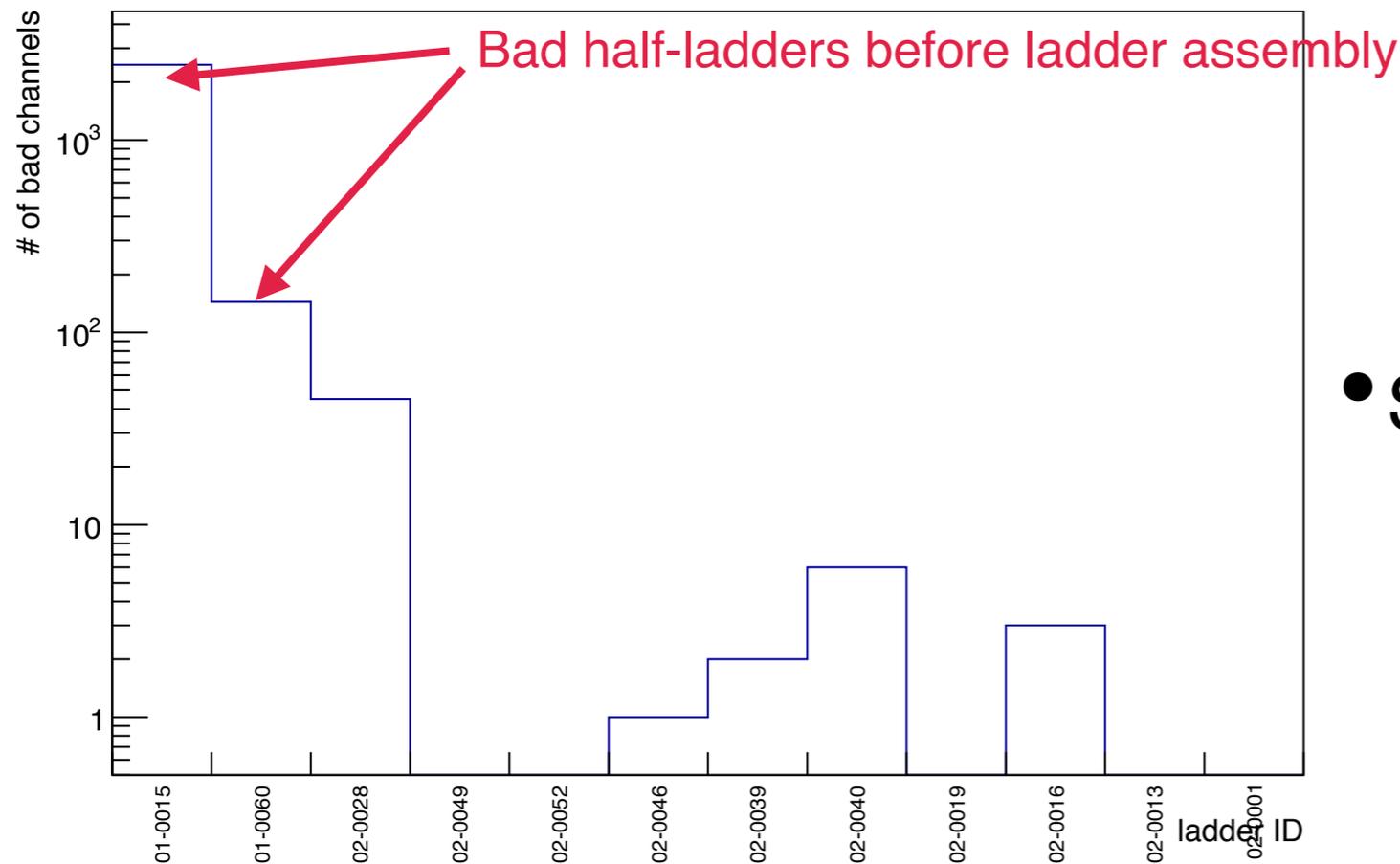


Proposal : not to use this criteria. Threshold study -> error function only

Ladder assembly



ladder bad channel summary



- Summary (based on 8 criteria) :
 - Class 1 : 9 ladders
 - Class 2 : 1 ladder
 - Class 3 : 1 ladder
 - Class 5 : 1 ladder

Class definition (same as BNL)

classification	bad channels	range	%
1			33.28 <0.5%
2	33.28		133.12 0.5% ~ 2 %
3	133.12		266.24 2 % ~ 4%
4	266.24		399.36 4% ~ 6 %
5	399.36		>6%