



고려대학교  
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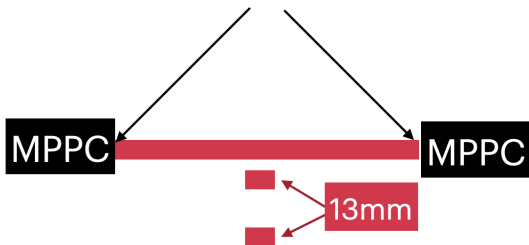
hau  
Hadron & Nuclear Physics Lab



## LAMPS Meeting

September 16, 2020    Kang, Byungmin

## Coupling: UV -> Grease



- Optical coupling should be compared.
- Board: same as previous
- PMT is not used

# Time resolution Comparison

name	Det	T1	T2	Events	$\sqrt{T_1^2 + T_2^2}$
Previous	218±2.1	69±6.6	96.9±4.7	4423	119
UVGlue	200±1.3	71±3.7	93.6±2.8	10823	117
Grease	189±2.9	67.6±8.1	93.8±5.8	2268	116

Note: ± is NOT from TW; Just from Gaussian Fit.

Table: Current result: Guided seg shows better resolution.

- ToF is determined with Detector, and T1,T2.
- Electronic noise is reduced.(PMT not used)

# Gain Comparision

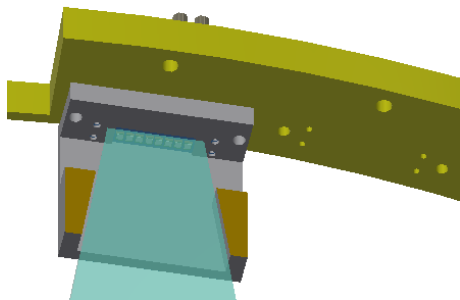
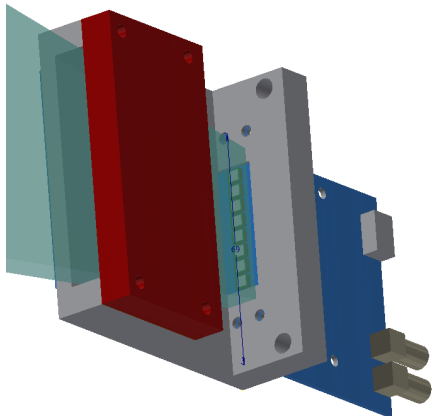
```
1 # f=[p0+p2/sqrt(ADC-p1)]/2, due to meantime; param convention : p0_1=p0 of 1st correction; Units are ADC/TDC
2 Params | 13UL 13UR 13DL 13DR | 13DL 13DR | 13DR Guide_MPPCL Guide_MPPCR |
3 Entries(MPV) | 2268 2268 2268 2268 | 2268 2268 | 2268 2268 |
4 MPV | 311.752 313.365 275.837 258.59 | 275.837 2268 | 134.052 131.022 |
Param_0915.dat
1 # f=[p0+p2/sqrt(ADC-p1)]/2, due to meantime; param convention : p0_1=p0 of 1st correction; Units are ADC/TDC
2 Params | 13UL 13UR 13DL 13DR | 13DL 13DR | 13DR Guide_MPPCL Guide_MPPCR |
3 MPV | 311.412 316.71 272.81 262.857 | 272.81 150.152 | 147.829 |
Param_0908.dat
```

Grease

UVGlue

- ADC Gain dropped about 10 %
- Gain might fluctuate, due to flowing grease(need to be checked)

# Remind: BTOF Frame&Board Holder



# BoardHolder



- Needs to be penetrated through red arrow

# Summary&Future plan

- Optical grease shows better resolution than UV curing.(200→189)
- Long-term monitor is planned to check gain variance due to grease flow
- MPPC Readout board of other type MPPCs are on design.
- Other scintillators(different guide shape) will arrive on Mid of October.