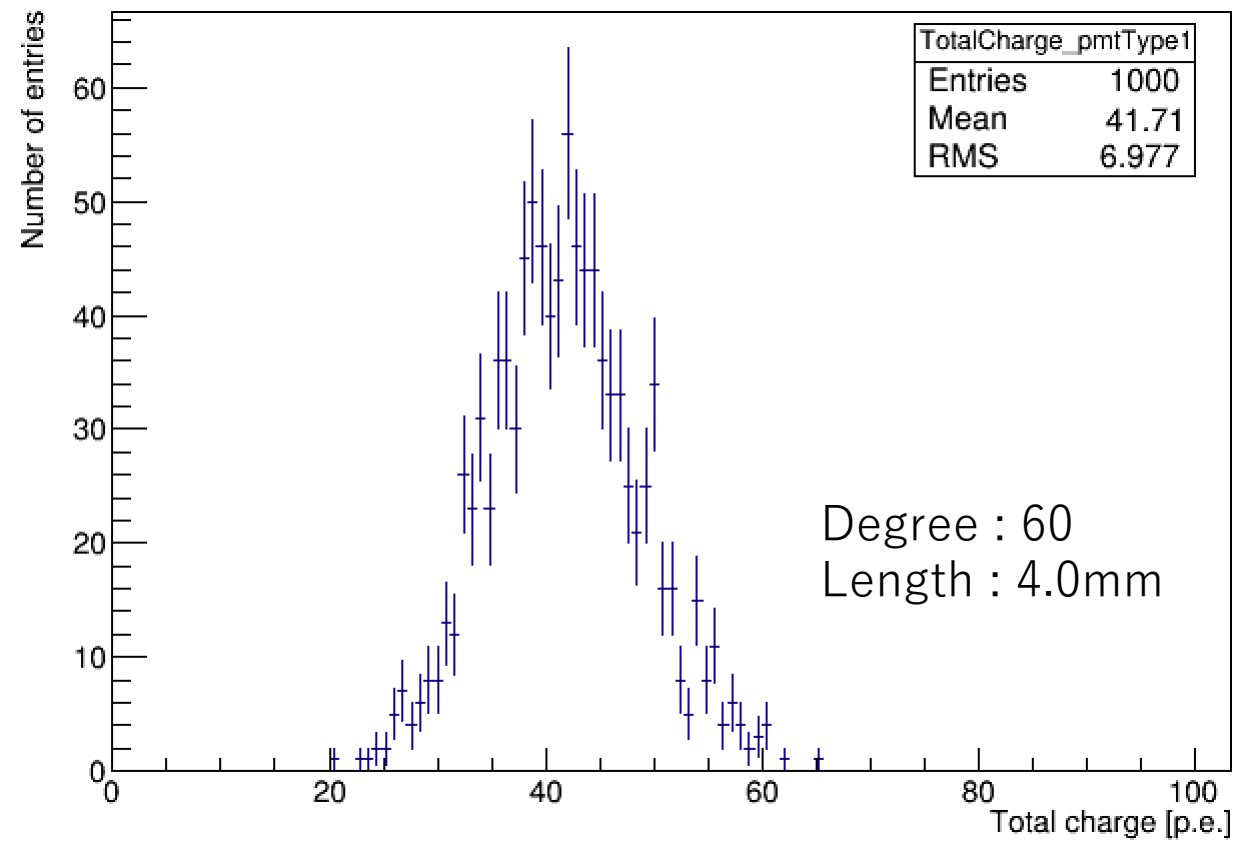
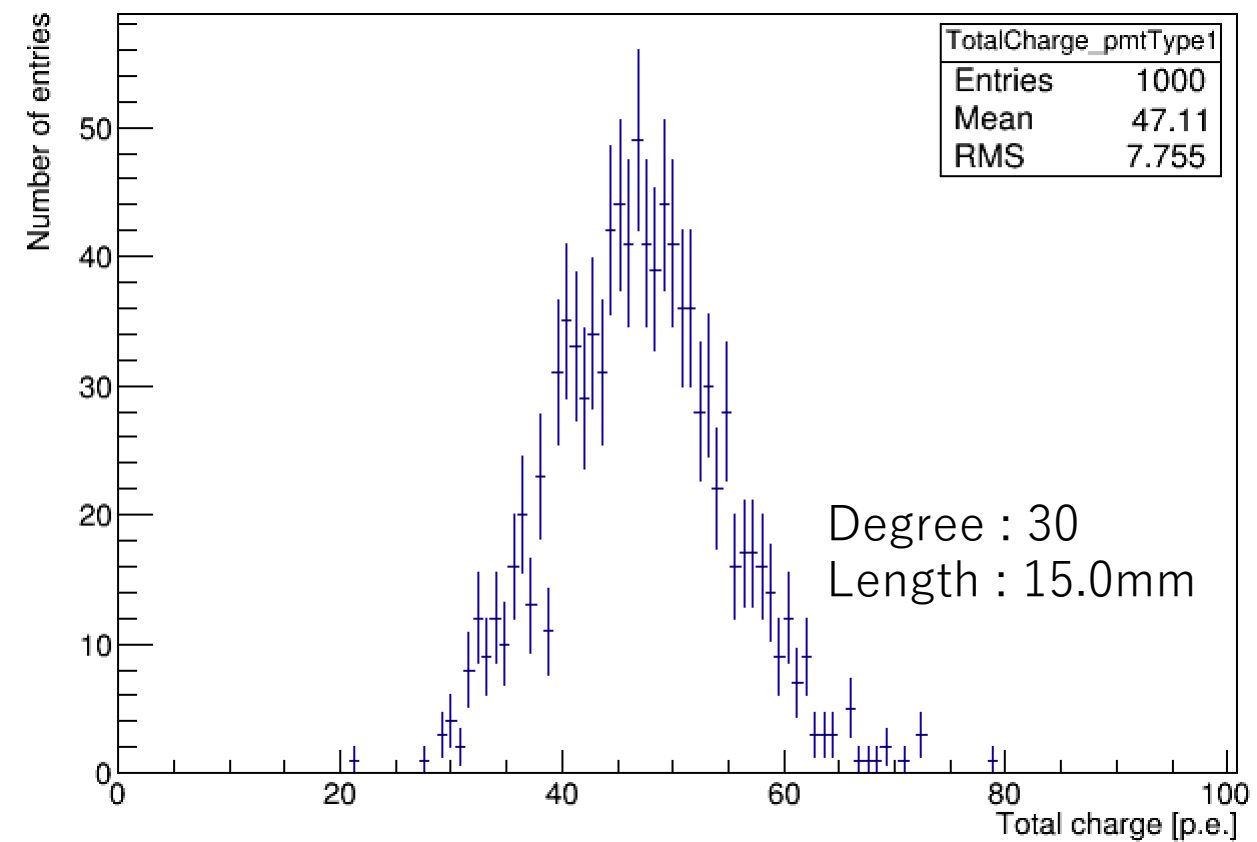


Status Report

Isao Sashima
Dec. 18 , 2020
mPMT meeting

- Using simulations, considered the shape of the reflector that gives the largest mean of total charge with changing the length and degree
- the reflector is too small → the photon cannot be captured efficiently
 - the reflector angle is too large → the reflector will overlap with the neighboring reflector
- looked for a suitable shape of reflector that satisfies the two requirements



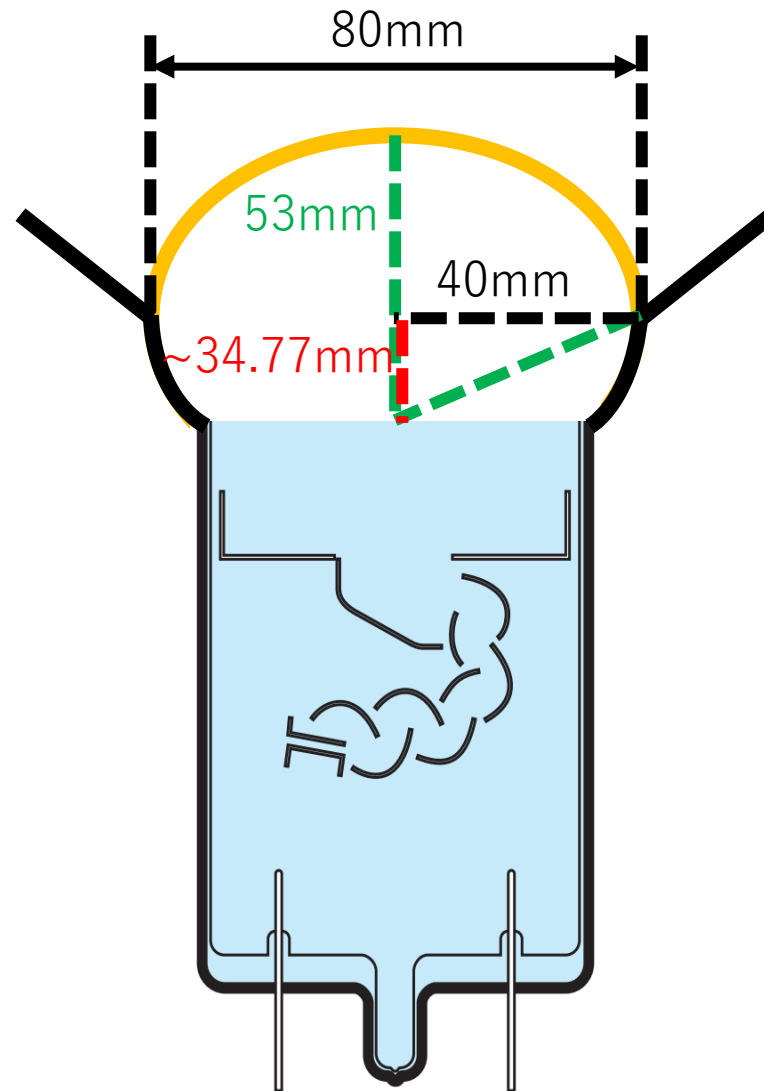
degree	20	25	27	30	31	32	33	35	37	40	48	60
Length (mm)	31.0	20.5	18.0	15.0	14.5	13.5	13.0	12.0	10.5	9.5	6.85	4.0
Mean of total charge	45.08	45.98	46.56	47.11	46.9	47.56	47.11	47	46.33	46.07	44.06	41.71

→ made from the condition “z-offset = 4.8mm”
the reflector is set to the edge of the photo sensitive area on type R14374

- investigate when the reflector is moved horizontally

Backup

3" PMT R14374



With these default values, generated 3.08eV optical photon

```
545 id_reflector_height = 6.53*CLHEP::mm; // for a radius of 7.25mm, for hex: 5.4mm (radius of 6mm)
546 id_reflector_z_offset = 4.8*CLHEP::mm; //from KM3Net CAD drawings
547 id_reflector_angle = 48.*CLHEP::deg; // Need to be remeasured for different PMT curvature
```

The relationship between dWall and the mean of total charge

dWall (m)	35	20	10	5
The mean of total charge	43.46	30.34	21.51	16.15

As dWall gets smaller, the total charge becomes smaller.