

# **DANTE detector**

**08/11/2021**

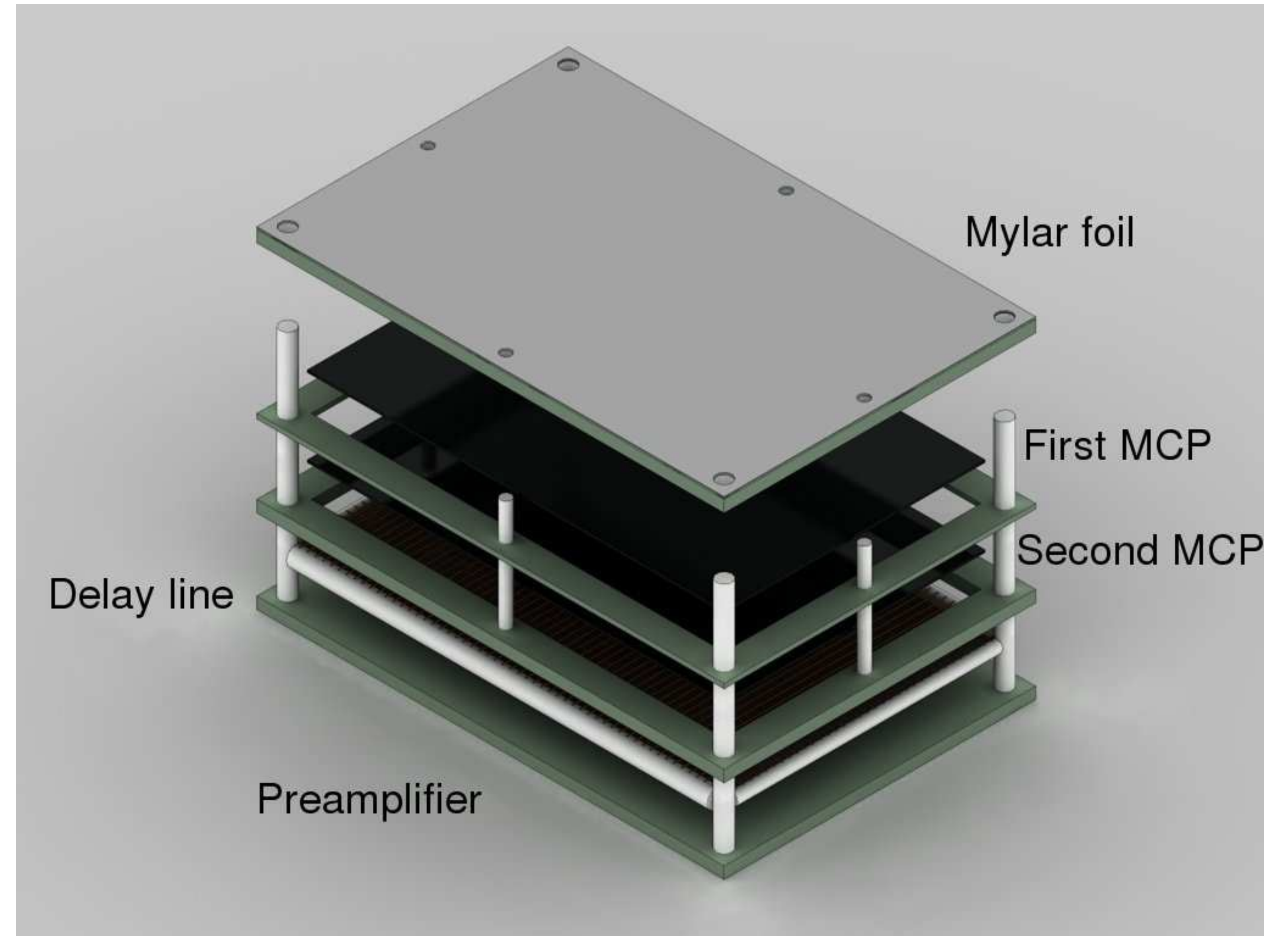
**Pre-PAC Workshop for the AGATA@LNL**

**Kseniia Rezyunkina**

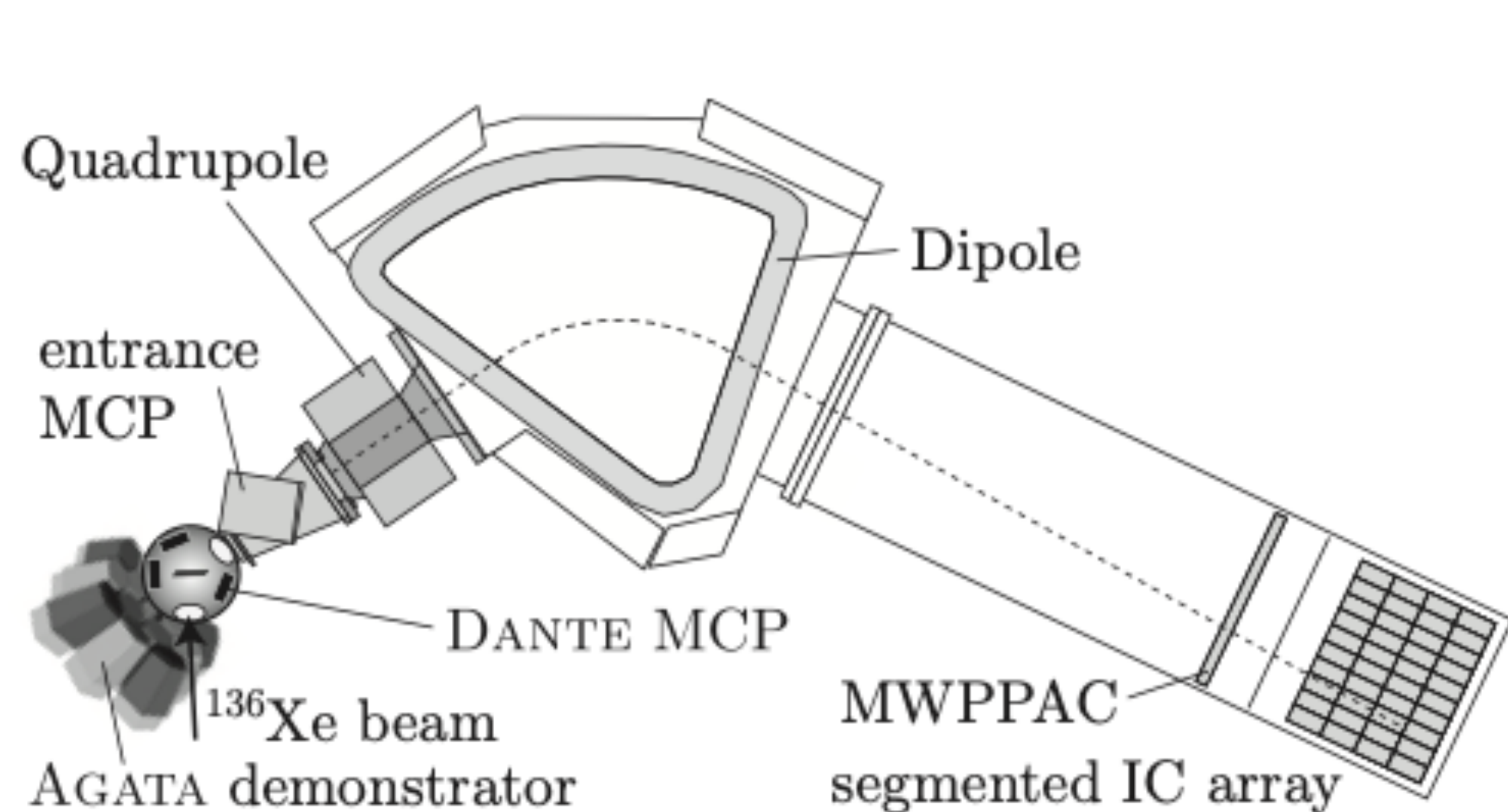
# Detector Array for multi-Nucleon Transfer Ejectiles

## MCP detectors :

- fast response
- good position resolution
- Detecting charged particles at grazing angles
- Can be put in forward direction
- Fusion-fission, MNT, coulex...



# 2010-2011 : AGATA demonstrator with DANTE

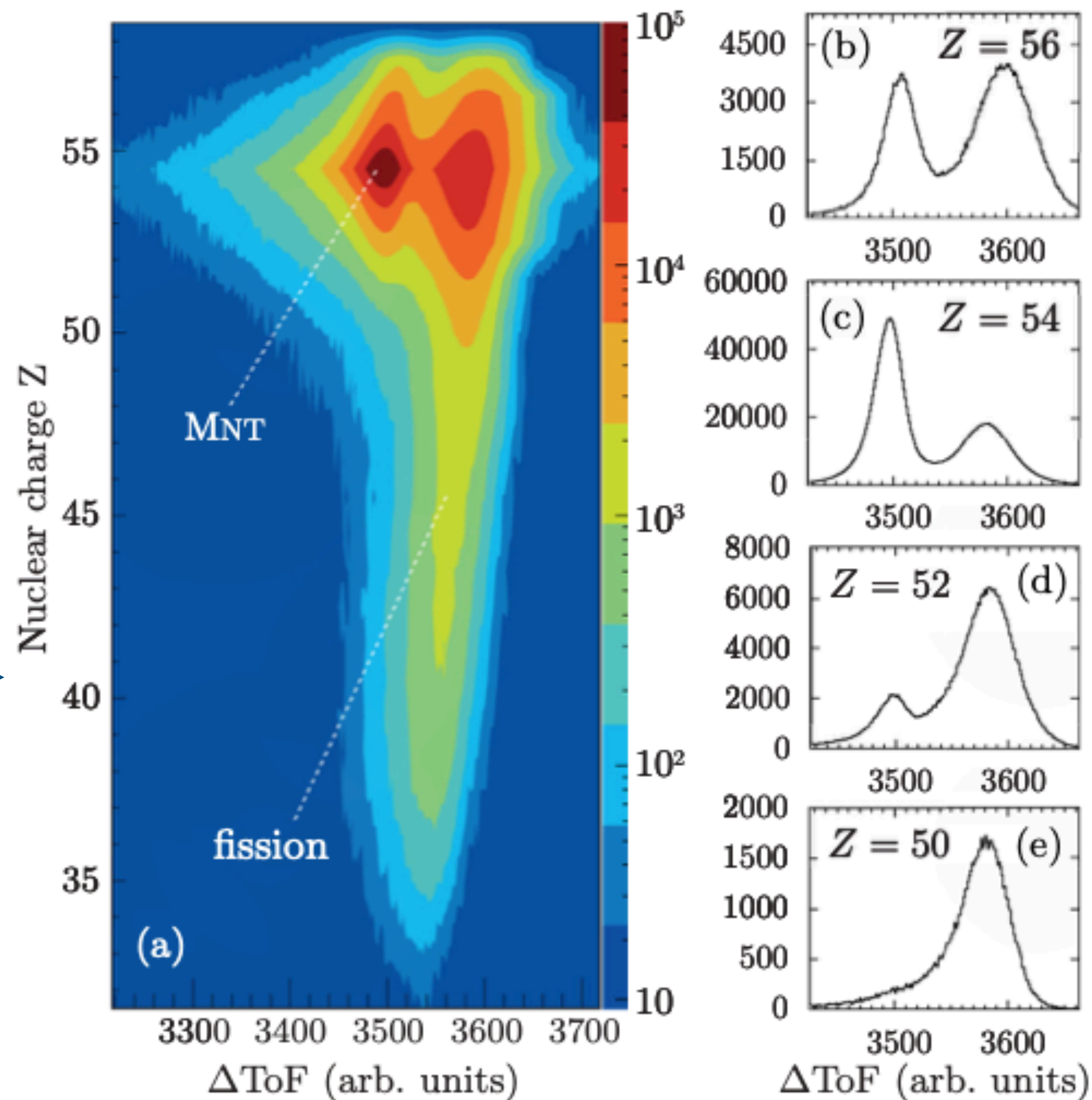


$^{136}\text{Xe} + ^{238}\text{U}$  MNT reaction

A. Vogt et al. Phys. Rev. C 92, 024619 (2015)

$^{42}\text{Ca}$  coulex

K. Hadyńska-Klęk et al. Phys. Rev. C 97, 024326 (2018)

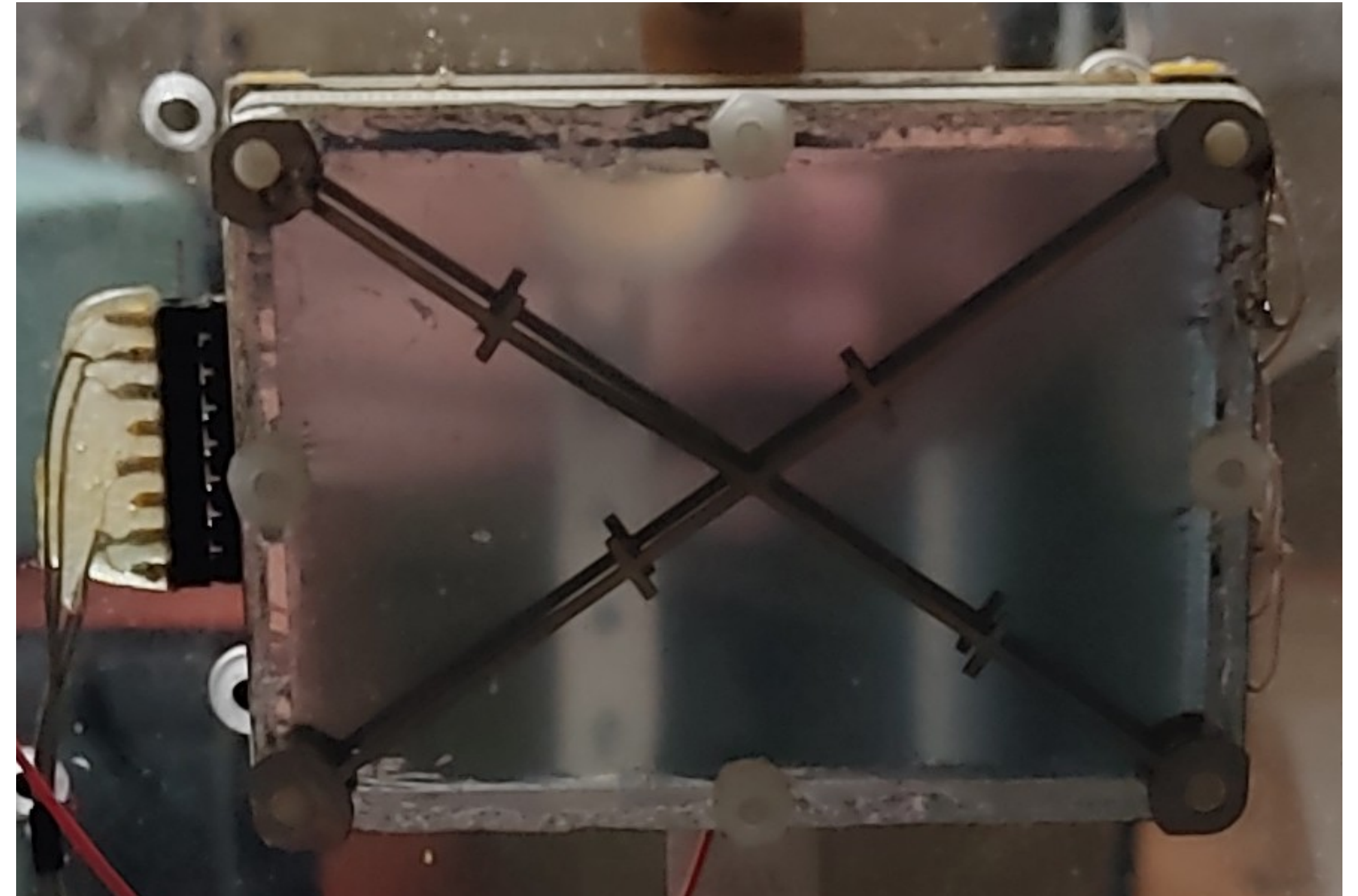
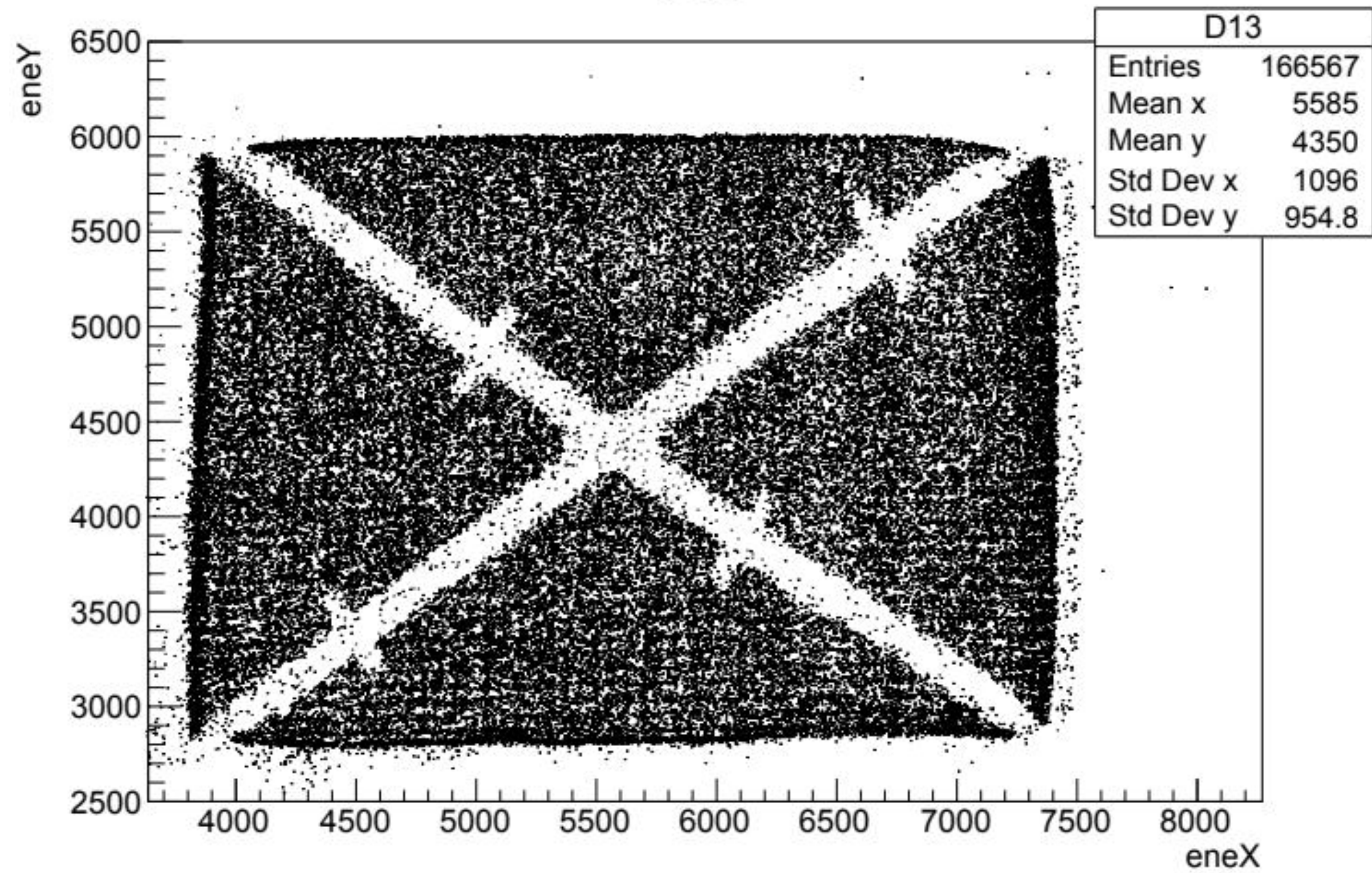


# DANTE detectors

3 readout channels / detector:

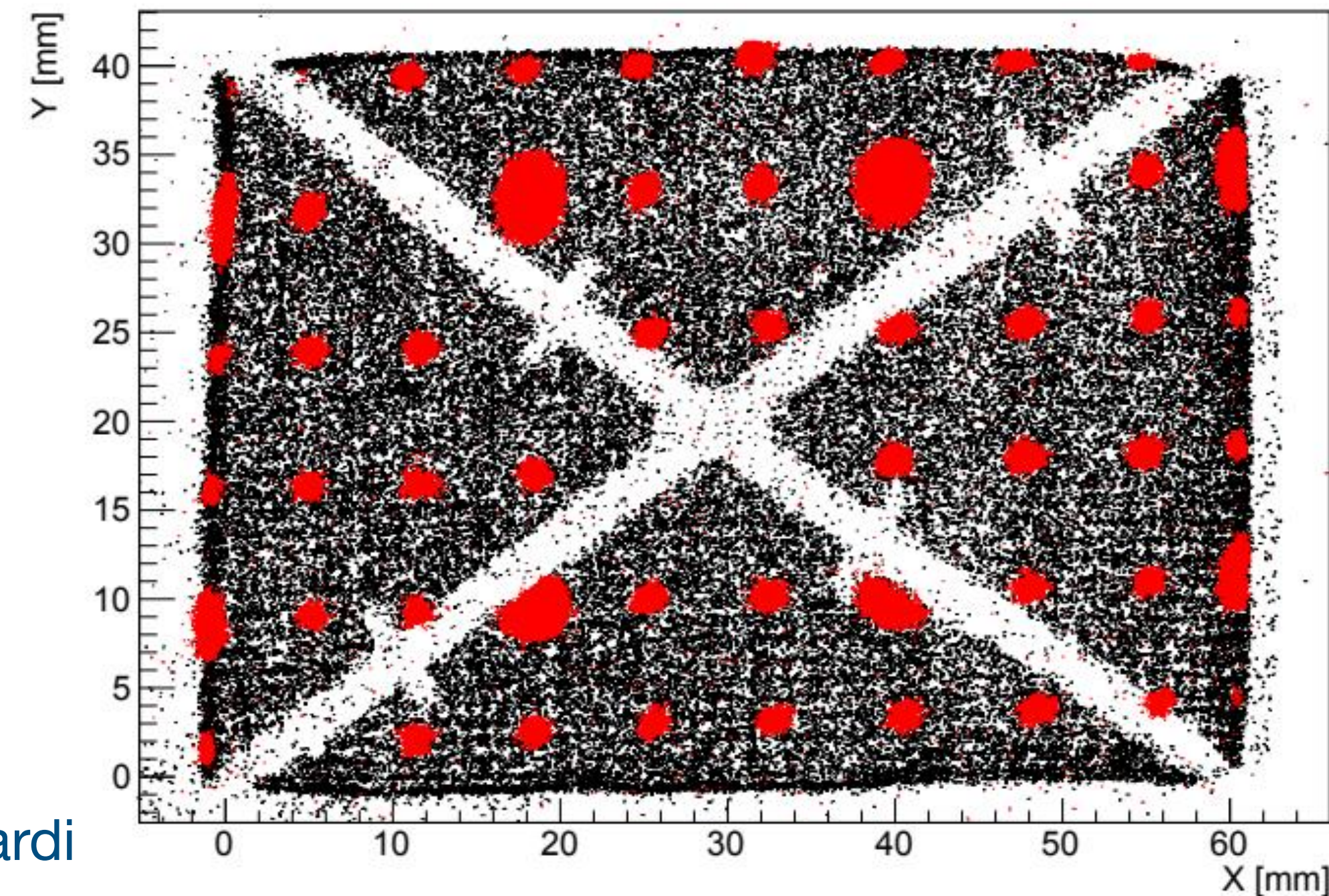
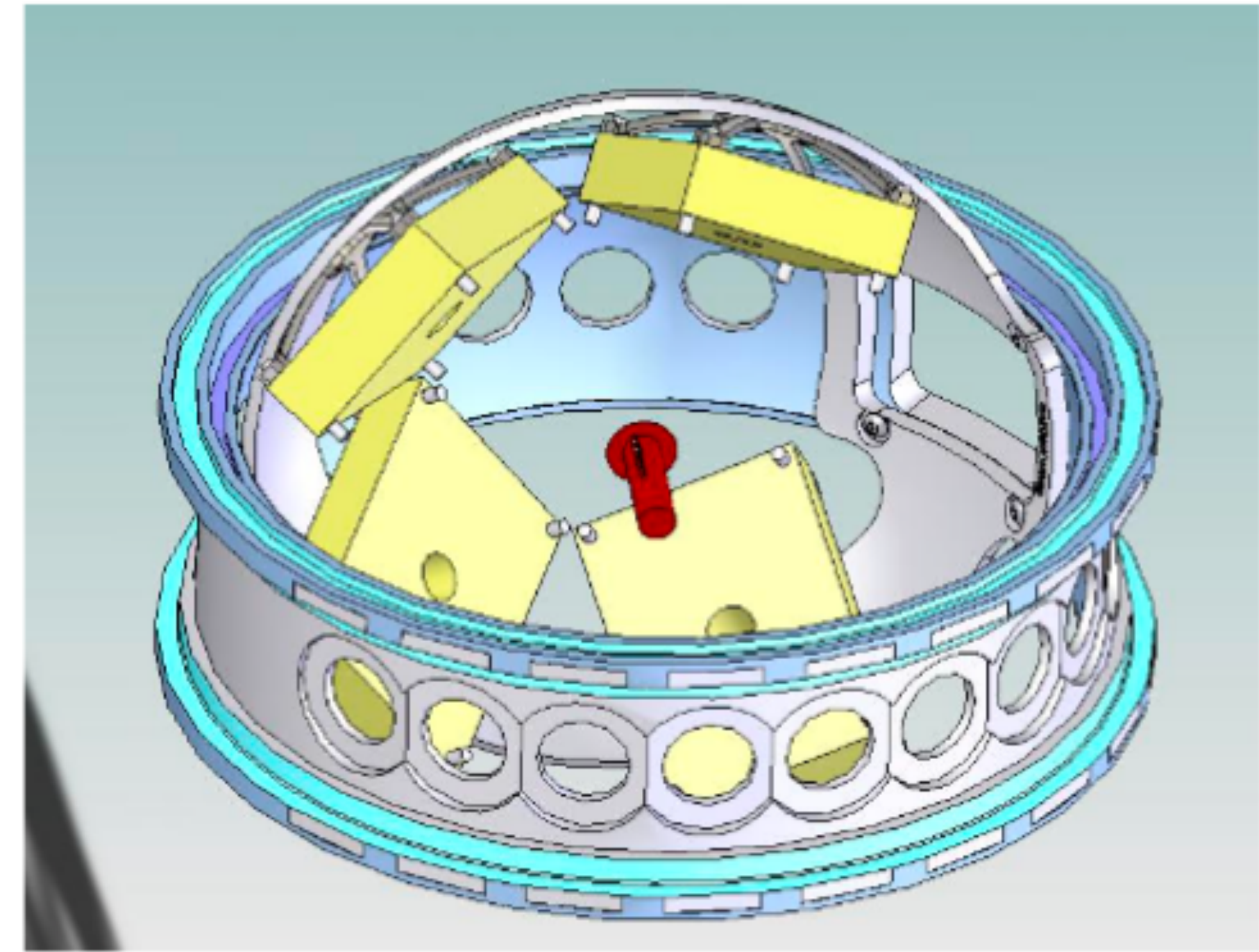
- x, y delay lines —> position
- fast signal —> timing

So, up to 24 DAQ channels  
(if 8 detectors are used)



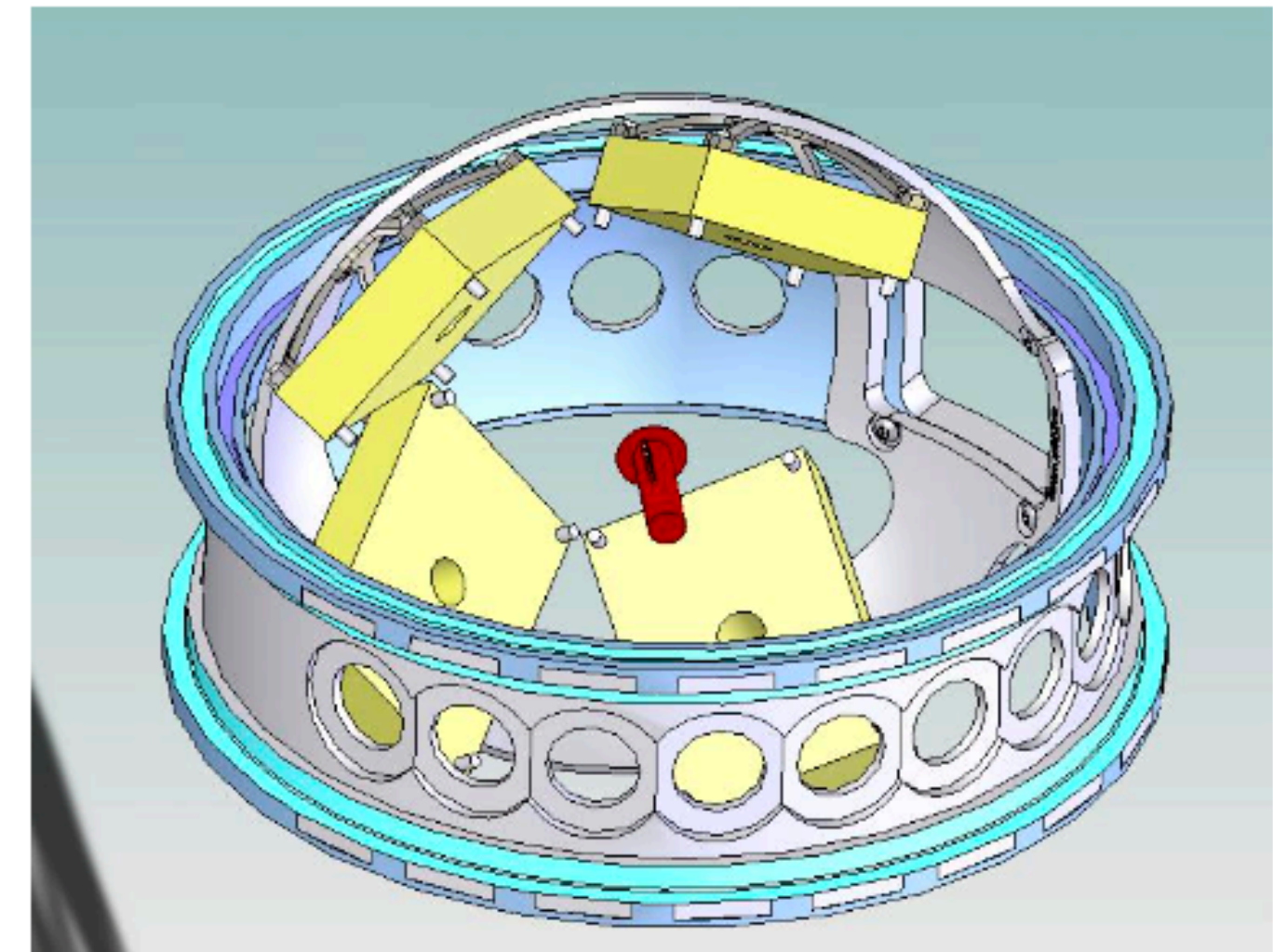
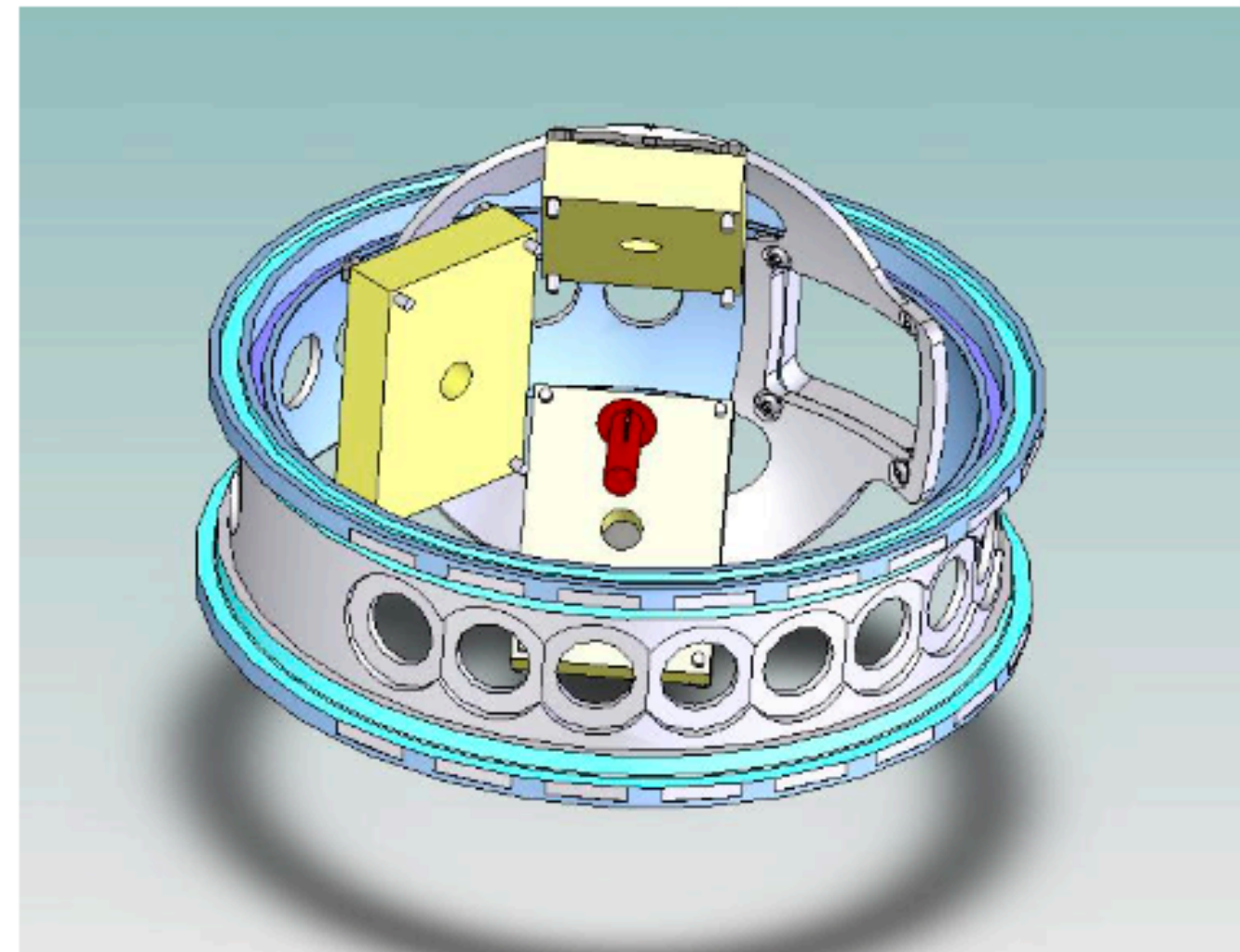
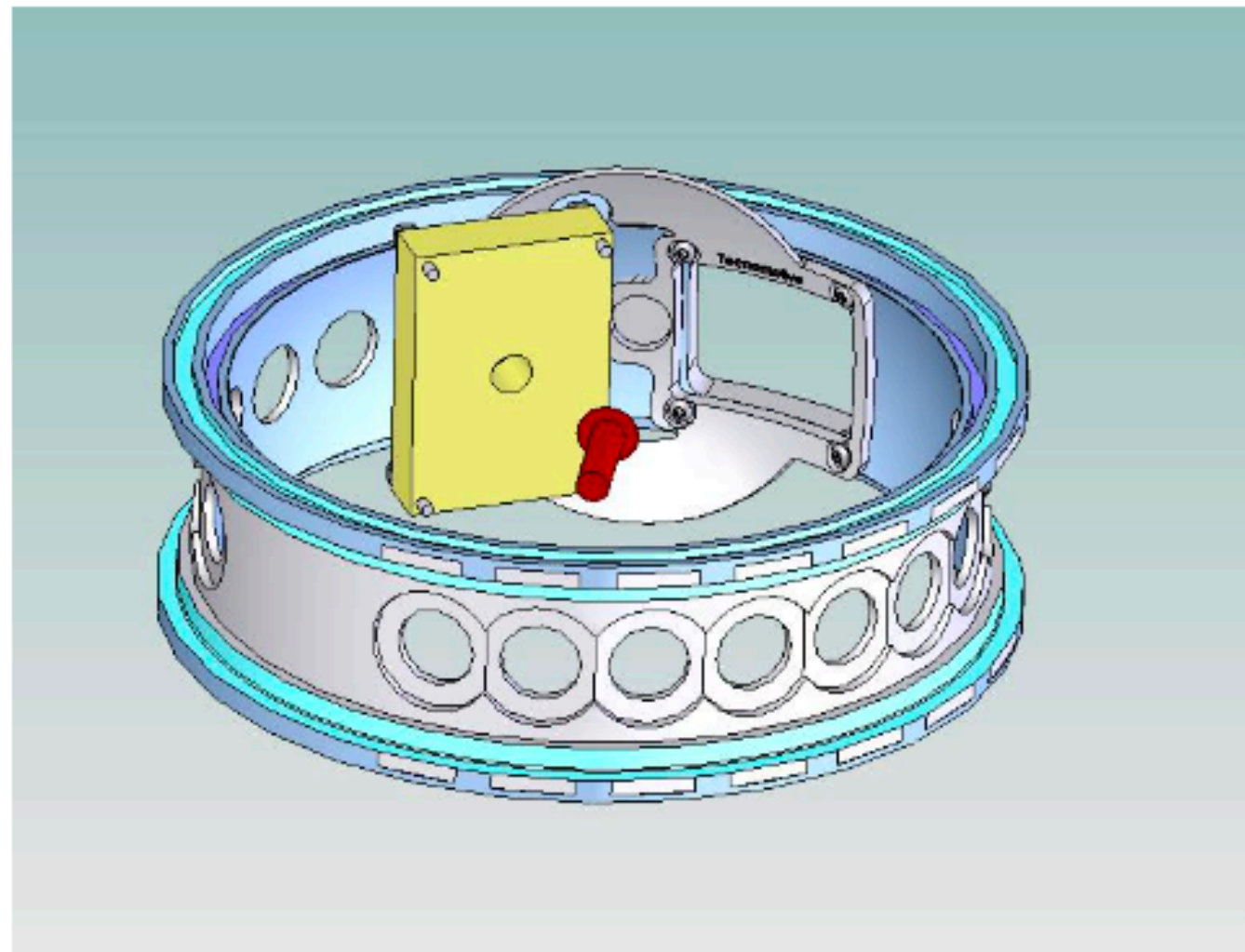
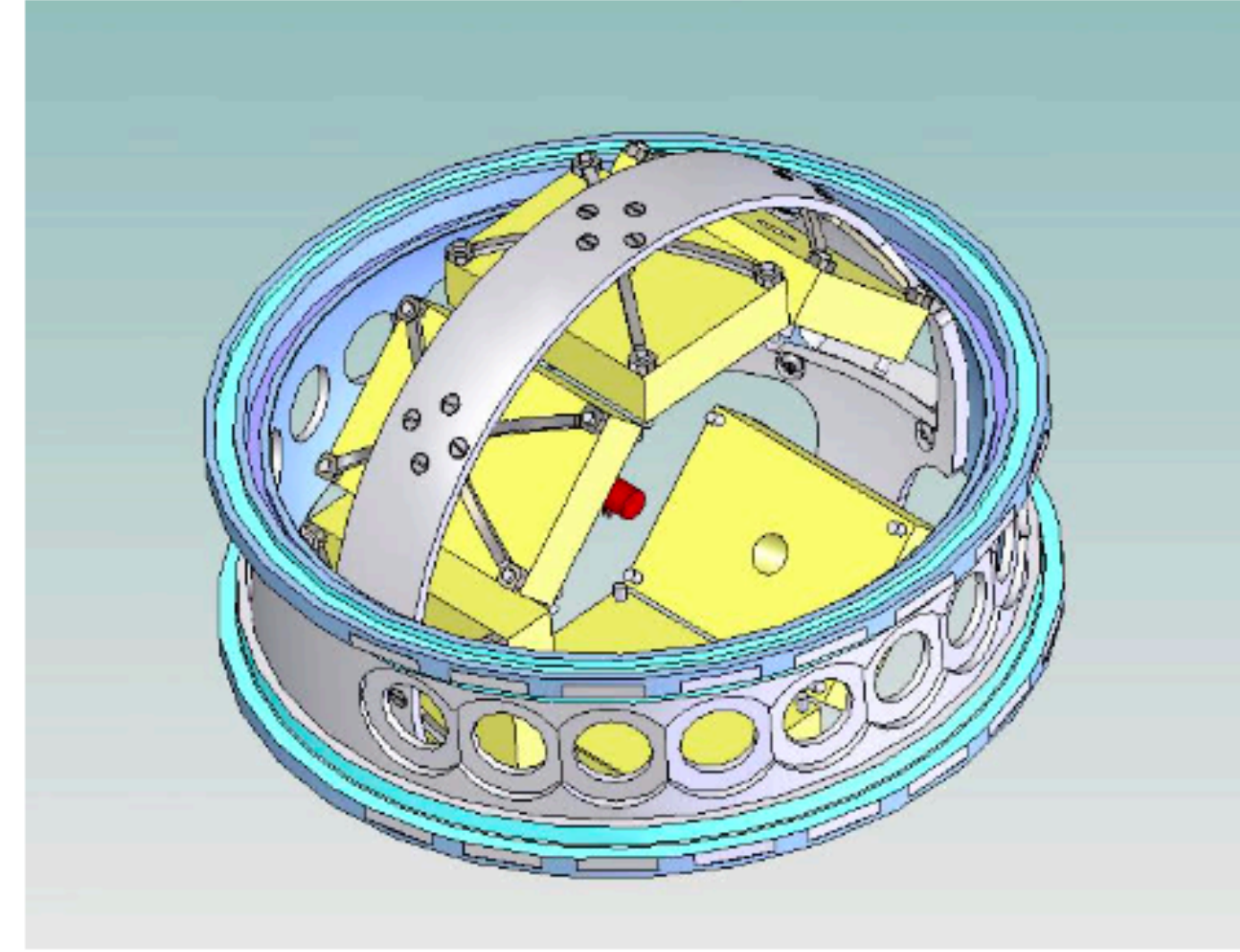
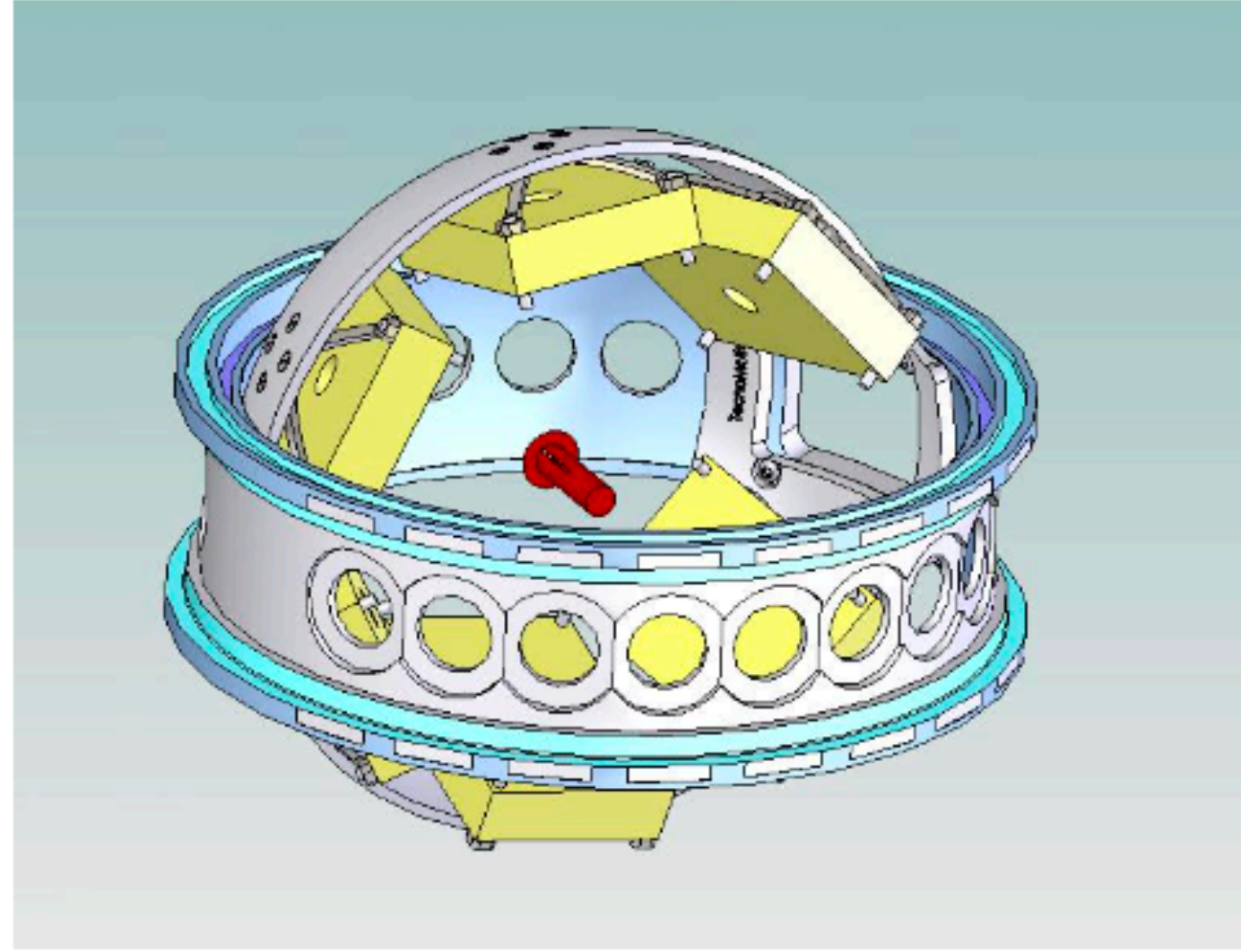
# Characteristics

- Dimensions **40×60 mm**
- Timing resolution: around **few 100 ps**
- Position resolution: **better than 1 mm**
- Single detector efficiency **~85% of solid angle**
- Total eff **~1.4% / detector @ 10 cm**
- 6 detectors in the old (12 cm) chamber —> **up to 8 detectors** in the 17 cm chamber (preliminary)
- 8 detectors in the new chamber **~6%**



# Flexible geometric configuration

In the old (12 cm) chamber



**Thank you !**



QVI COELVM CECINIT MEDIVM QVE IAM QVE TRIBVNAL LVSTRAVIT QVE ANIMO CVNCTA POETA SVO DOCTVS ADEST DANES SVA QVE FLORENTIA SAEPE  
SENSIT CONSILII AC PIETATE PATRIS NIL POTVIT TANTO MORIS SAEVA NOCERE POETA QVEM VIVVM VIRTVS CARMEN IMAGO FACIT