TINA

A Si/CsI Setup for Light Recoiling Particles from Transfer (and other) Reactions

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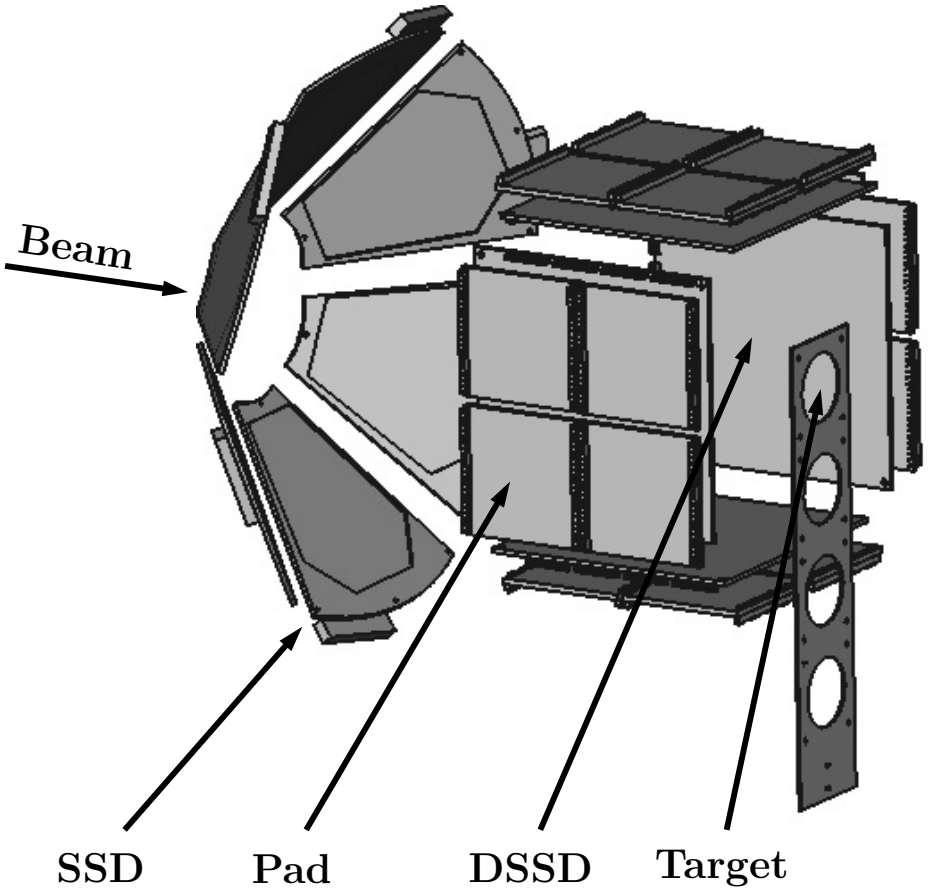
The Setup TINA for Proton Detection

Joint project of CNS, RCNP, RIKEN



- DSSD: micron TTT-type

  10×10 cm^2, 300 μm thick,
  128×128 channels
- SSD: micron YY1-type

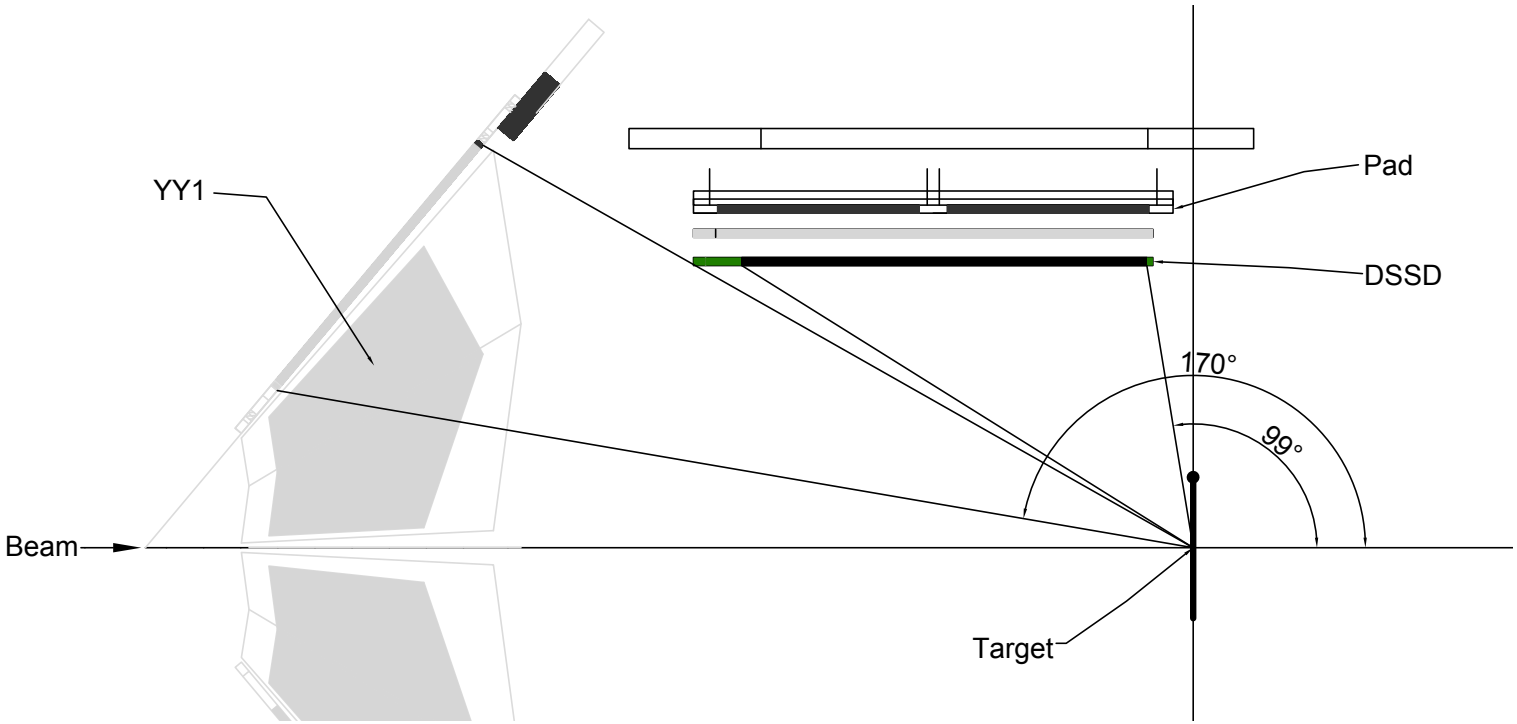
  Radii active area: 5-13 cm, 16 strips

  300 μm thick
- For total E measurement:

  Si pads or CsI behind DSSDs

  At the moment CsI "small" are foreseen (see below)

Detector Arrangement



- Angular coverage:
  - DSSD: $\vartheta \approx 99 - 148$ deg
  - YY1: $\vartheta \approx 150 - 170$ deg

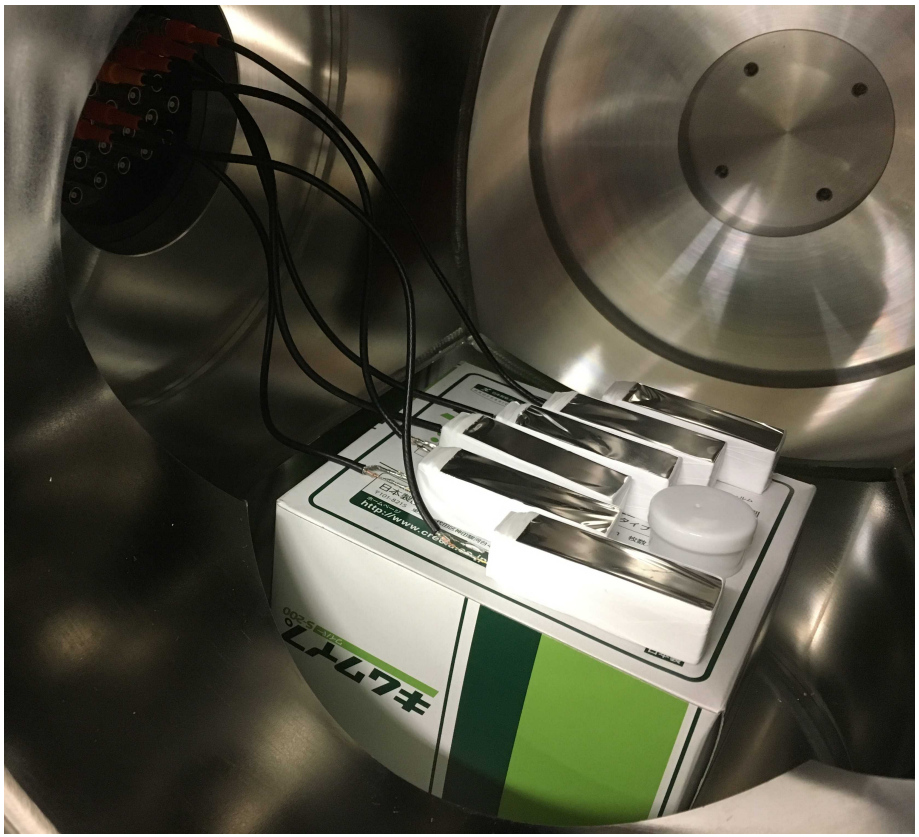
CsI Overview

YY1/CsI telescopes were used in OEDO Day 0 experiment

CsI "Large"

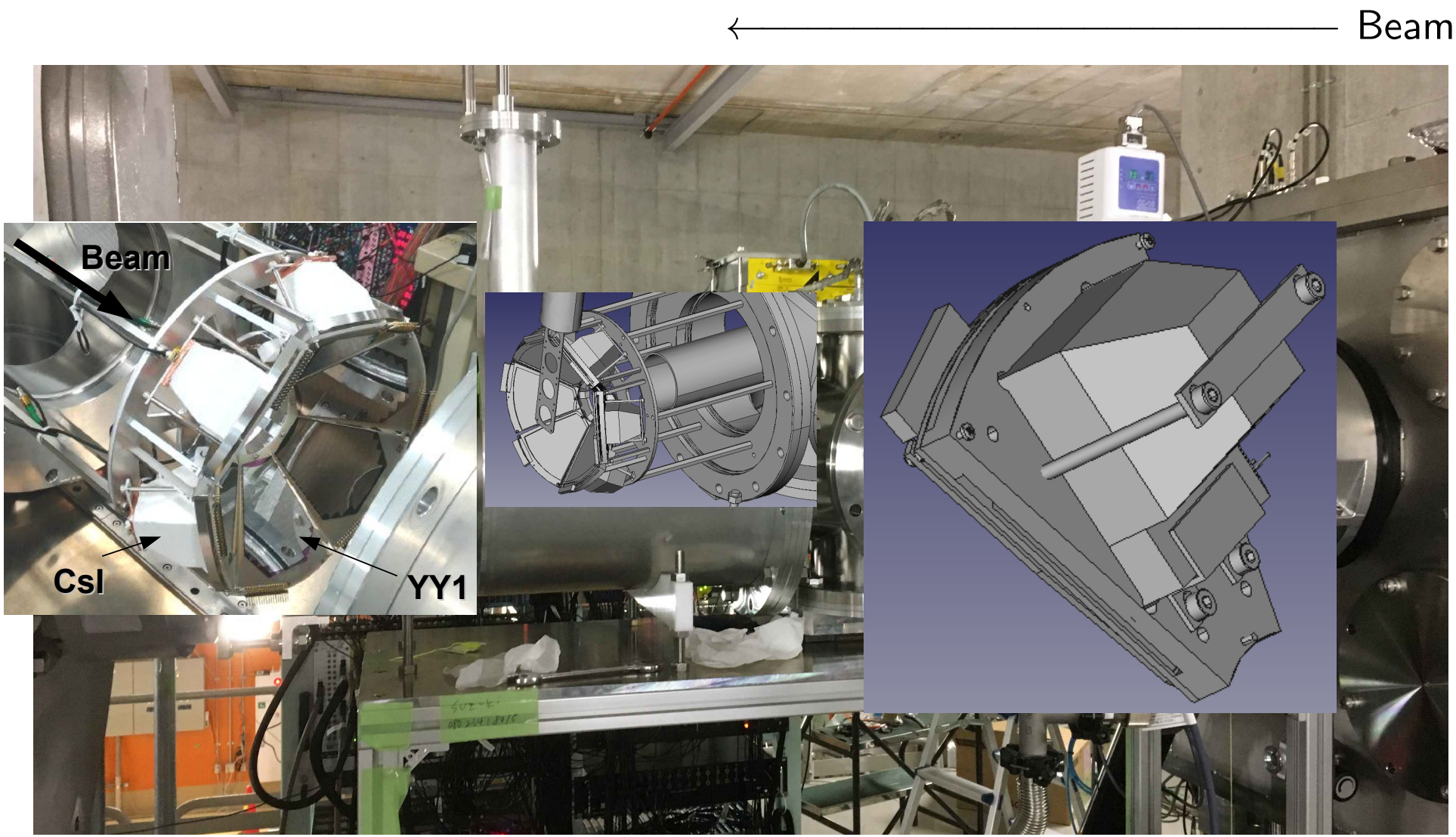
- Dimensions $50 \times 50 \times 25$ mm^3
- Ready to use: 6

CsI "Small"



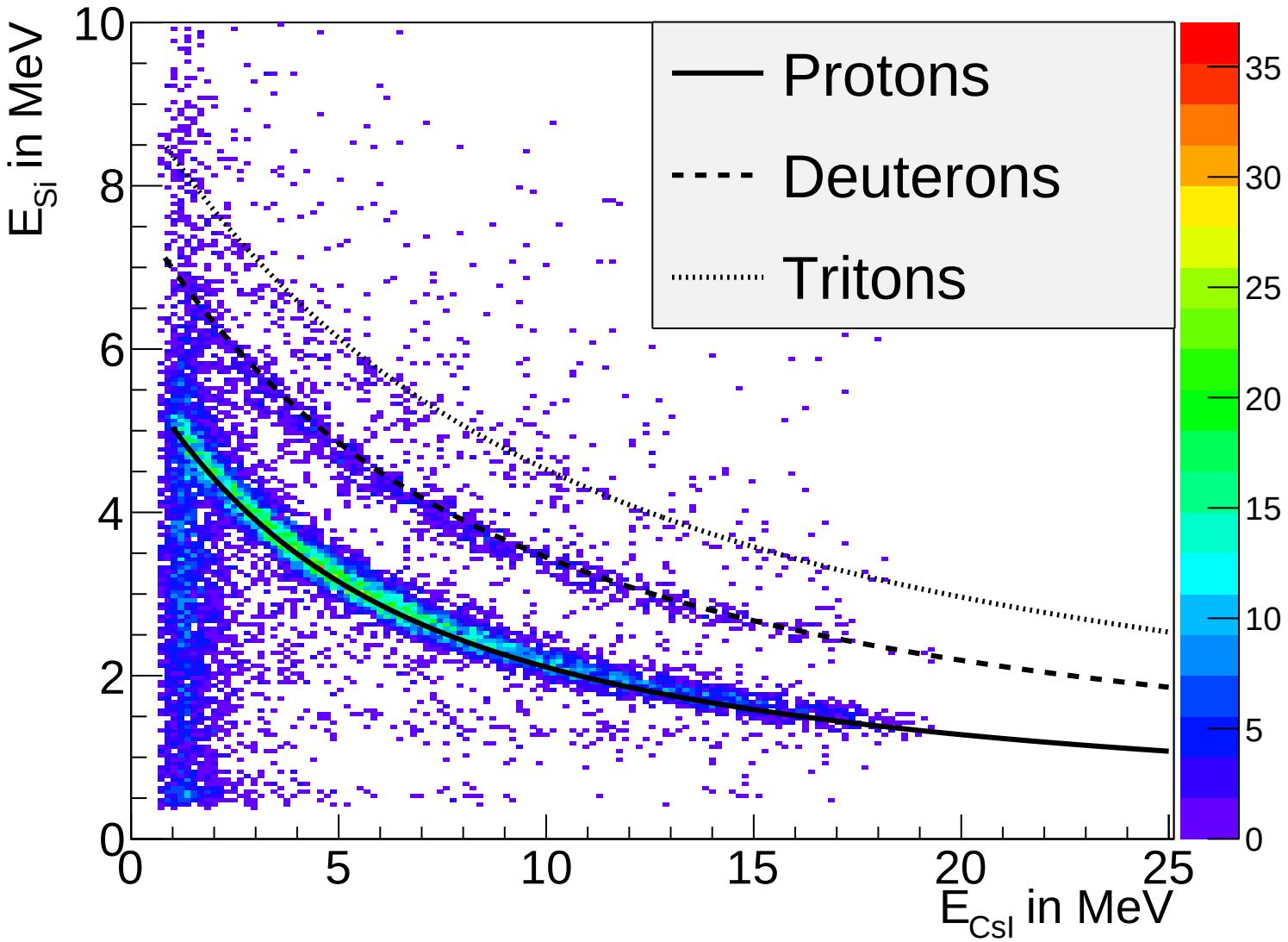
- Dimensions $50 \times 17.5 \times 17.5$ mm^3
- Ready to use: 6 (available > 100)

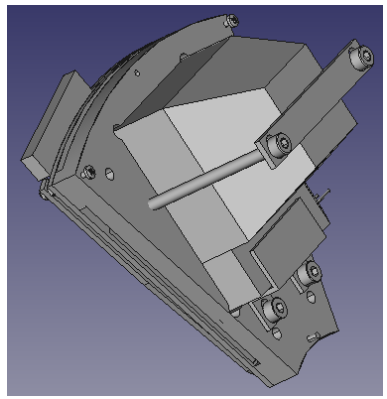
Design for OEDO Day 0



- Six SSD / CsI telescopes: One “Large” and one “Small” behind each YY1

OEDO Day 0 Performance

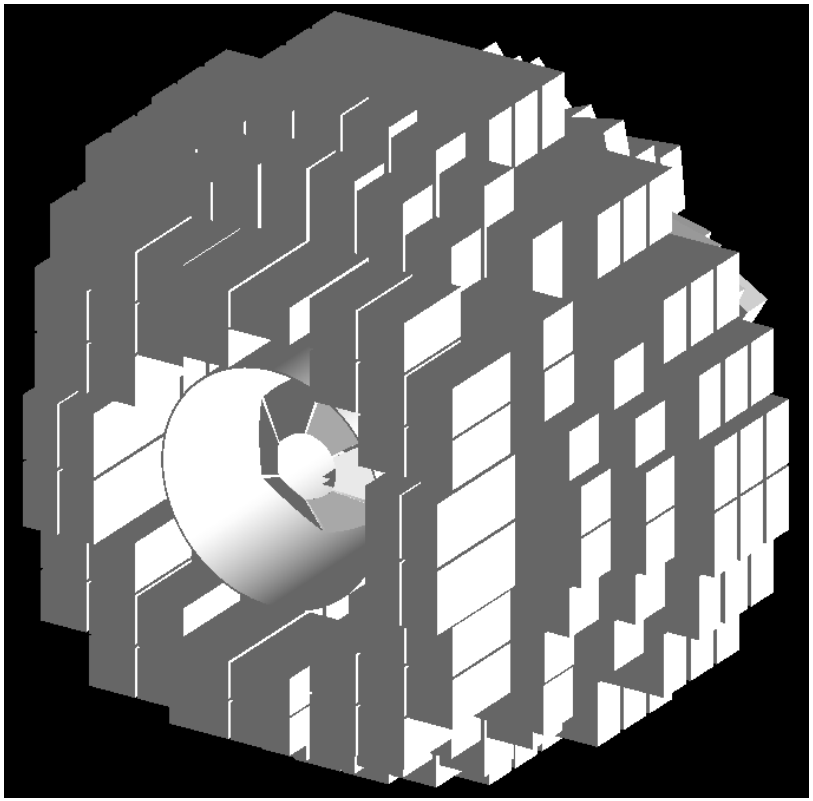




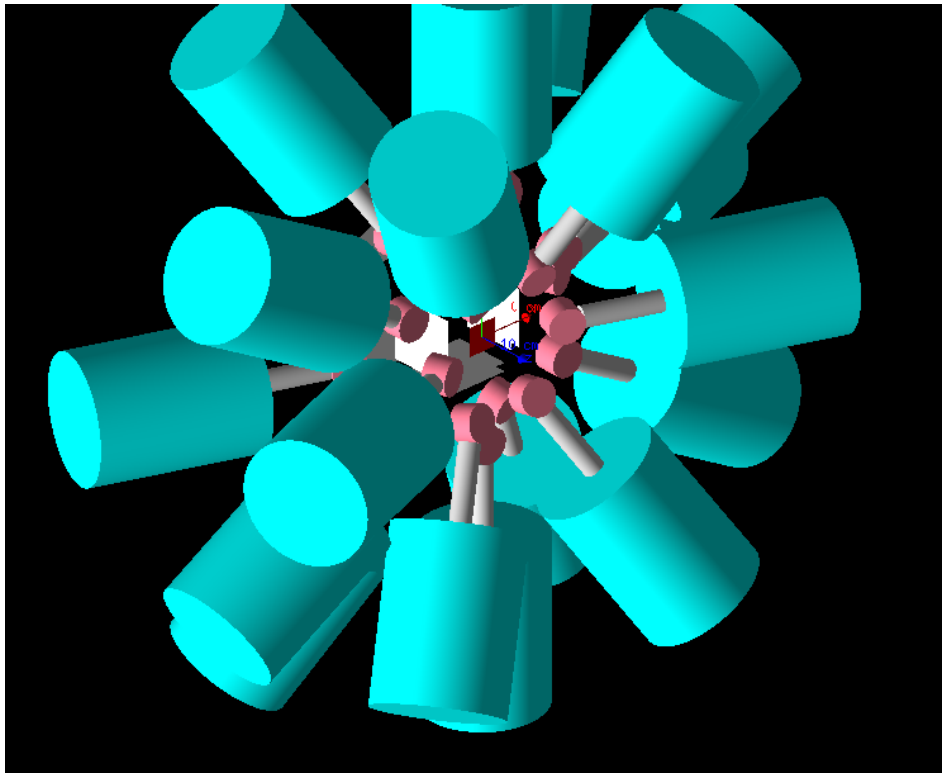
PID of light recoiling particles

Transfer with γ-Ray Spectroscopy

Coupling to γ-ray detector arrays is planned.



DALI2+
($\Delta E/E \approx 7\%$, $\epsilon \approx 18\%$)



GRAPE
($\Delta E/E \approx 1\%$, $\epsilon \approx 1\%$)