

Lund



- present status
- preliminary results from commissioning

York



Cologne

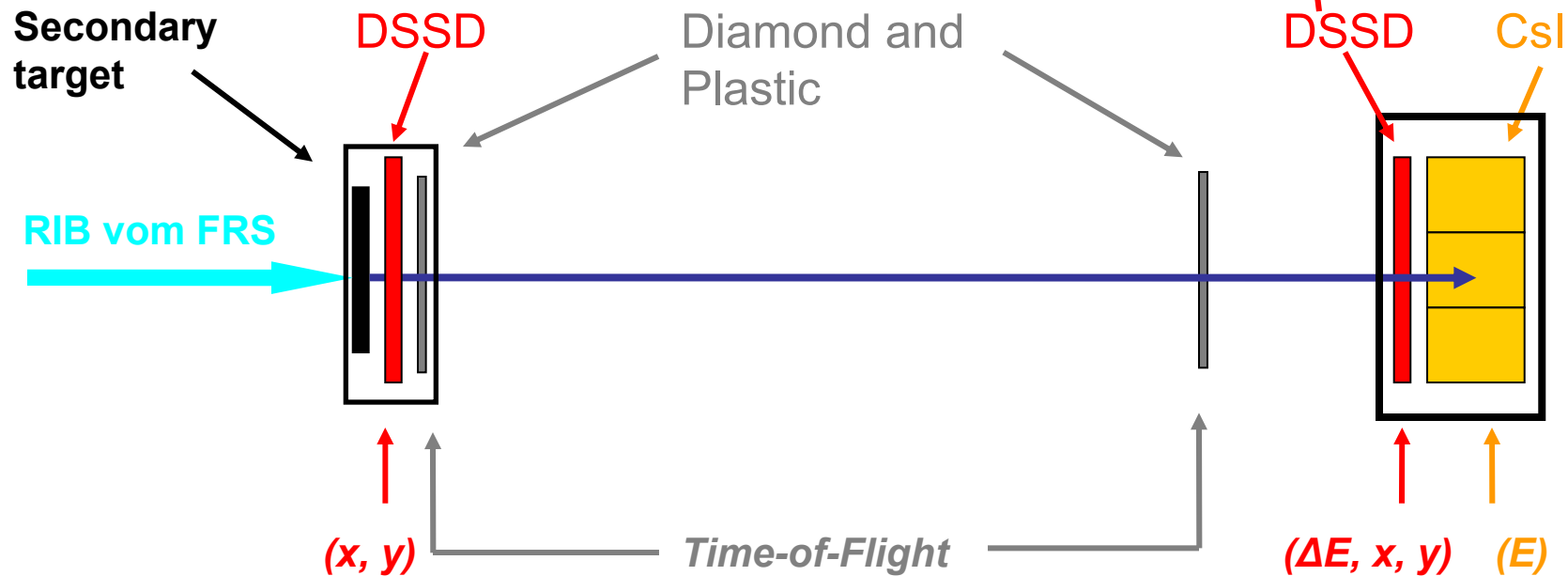
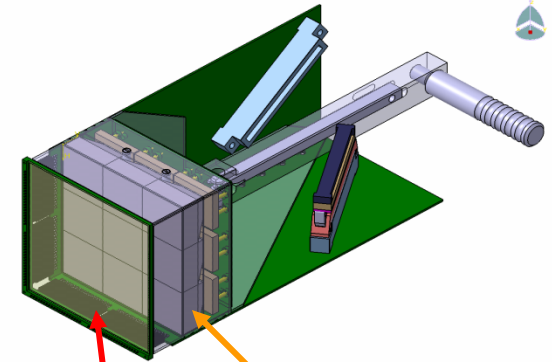
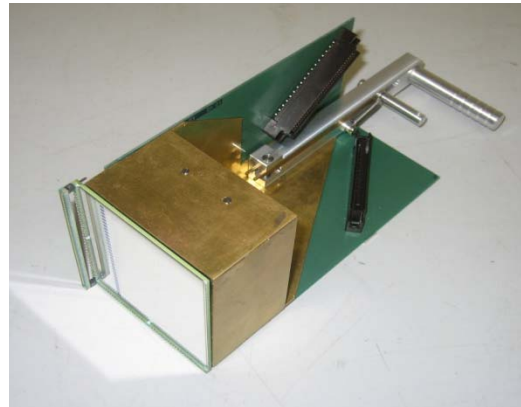


Calorimeter

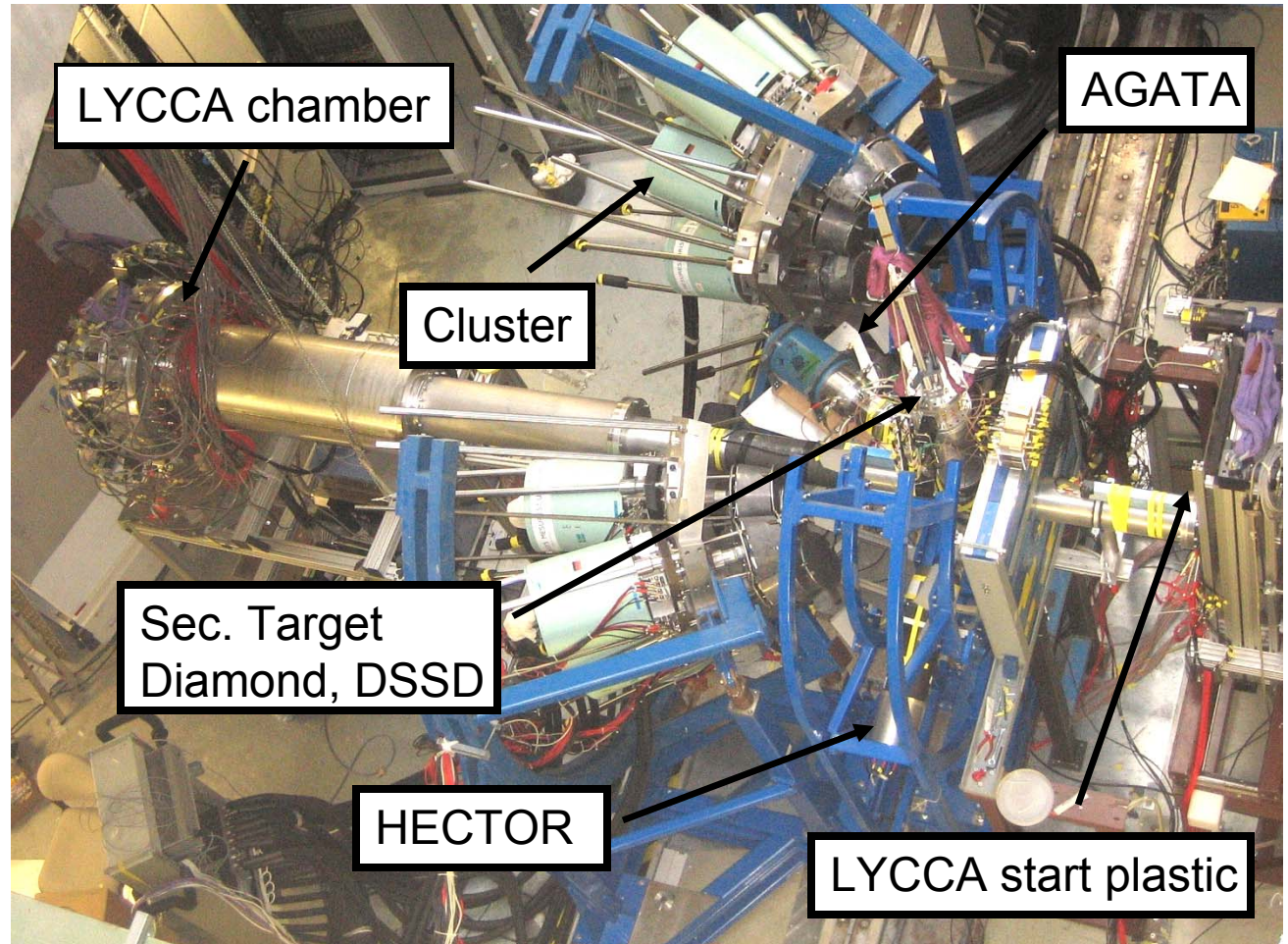
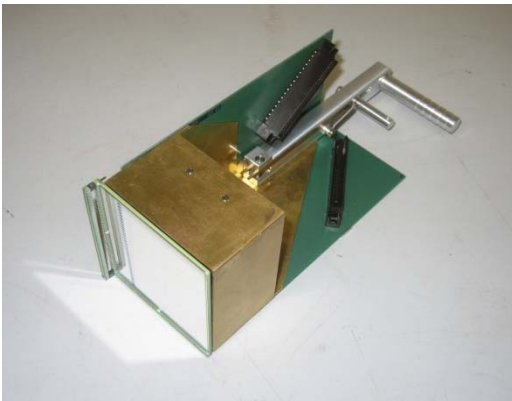
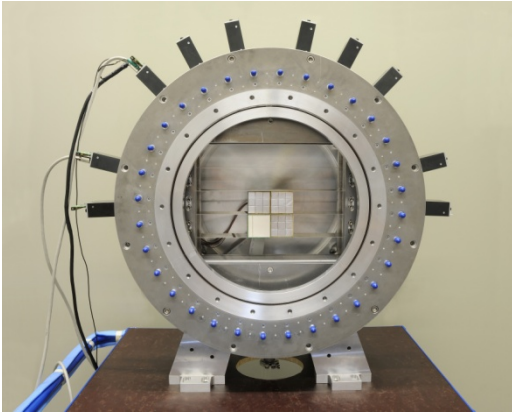
Reminder: Detection principle

LYCCA-0 ΔE -E-detectors:

12 DSSDs
12x9 CsI



Status: LYCCA - S363



Status: Silicon detectors

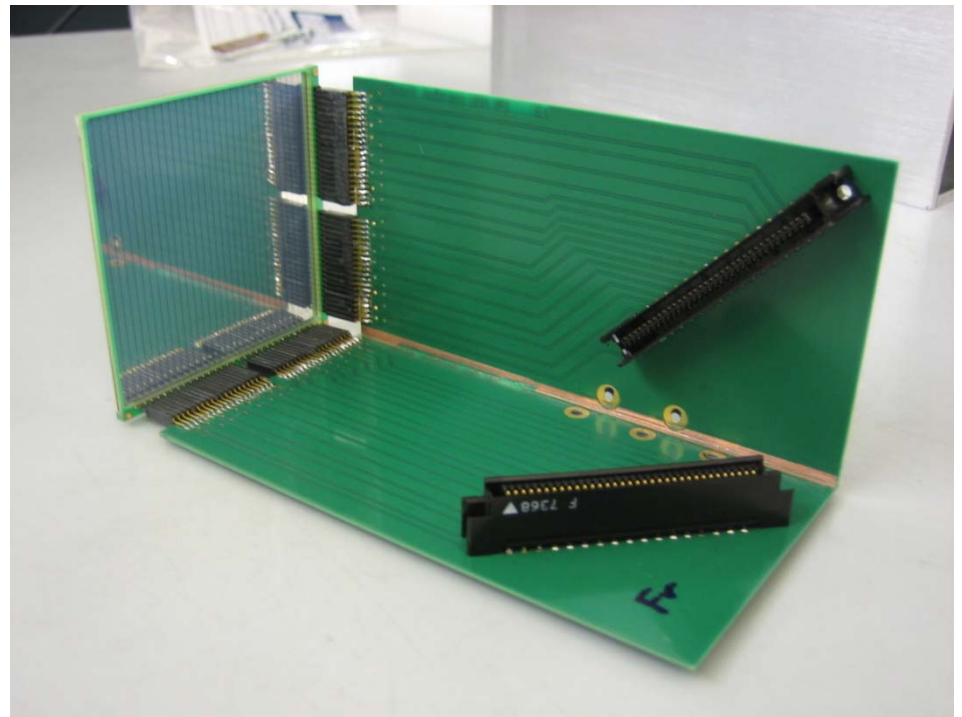
- 32 x 32 strips
- Active area 58 x 58 mm²
- Interstrip distance : 75 μ m
- thickness: 300 μ m

12 ΔE -detector used for LYCCA-0

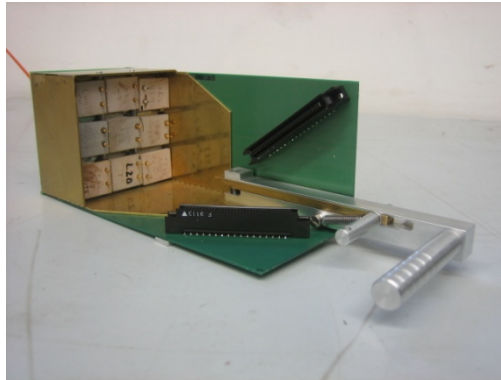
ΔE -detector status:

- 12 + 4 DSSDs ready!

[12 ΔE -detectors tested in-beam]



Status: CsI-scintillators

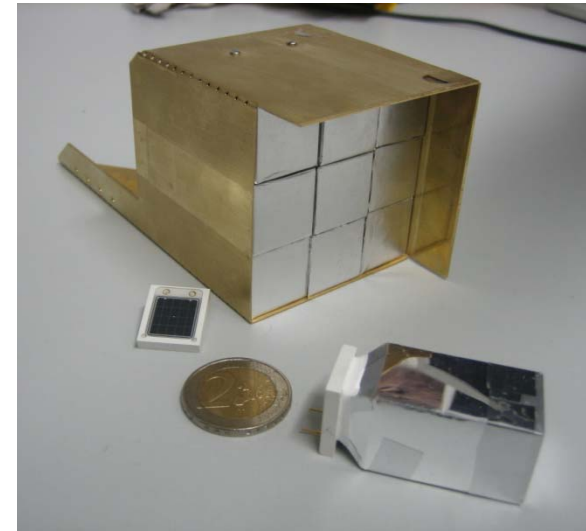
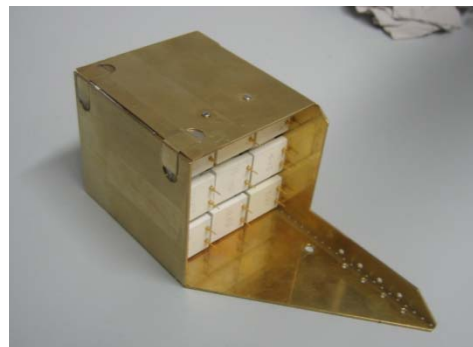
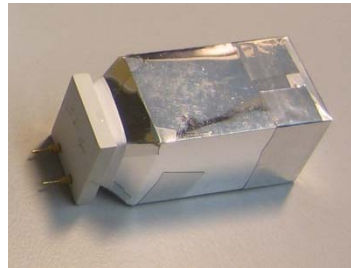
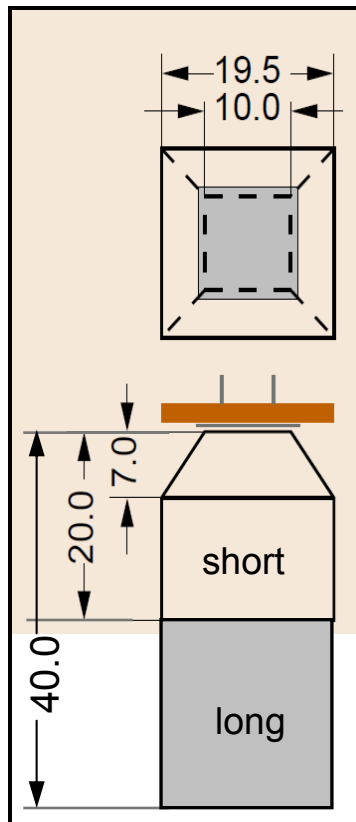


„long“ crystals (33+7mm)

- 12 E-Blocks ready
- “spare”-crystals on hand ~20

„short“ crystals (13+7mm)

- 2 E-Blocks assembled, tested
- crystals for another 4 blocks available
- mechanics for 12 E-Blocks available



Status: Electronics



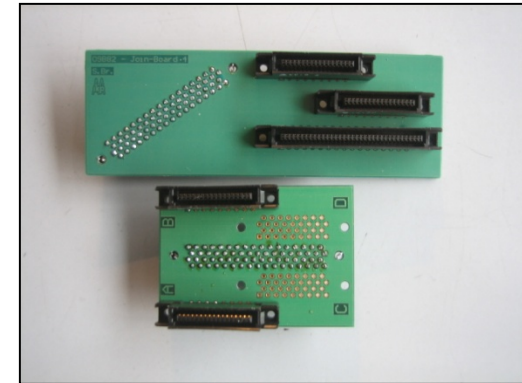
32ch - CSP

200 MeV:

- 18 available

4 GeV:

- used for commissioning
- 22 available



(x2 / x4 join-board)

Actual setting

16ch	16ch	16ch	16ch
64ch	64ch	64ch	64ch
16ch	16ch	16ch	16ch

4 x full, 8 x jB4

Available in 2011

32ch	32ch	32ch	32ch
32ch	32ch	32ch	32ch
32ch	32ch	32ch	32ch

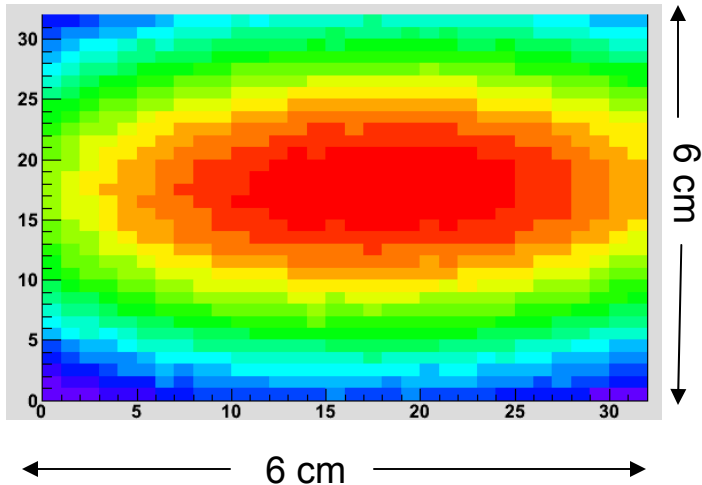
12 x jB2

9ch	9ch	9ch	9ch
9ch	9ch	9ch	9ch
9ch	9ch	9ch	9ch

DSSD 384ch + Csl 108ch
→ **12 + 4 PreAmps**

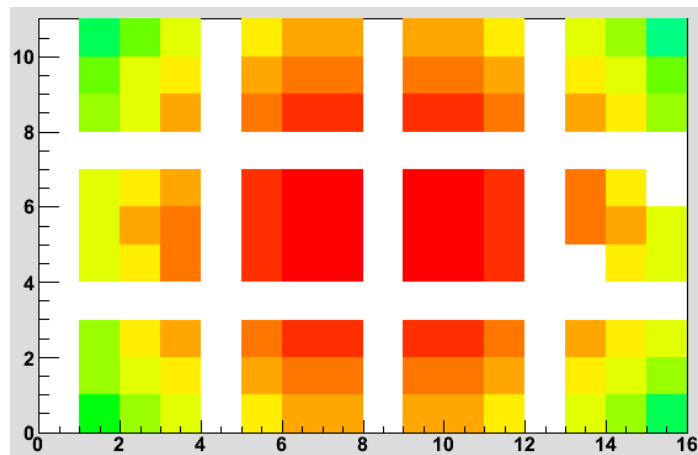


Hitpattern



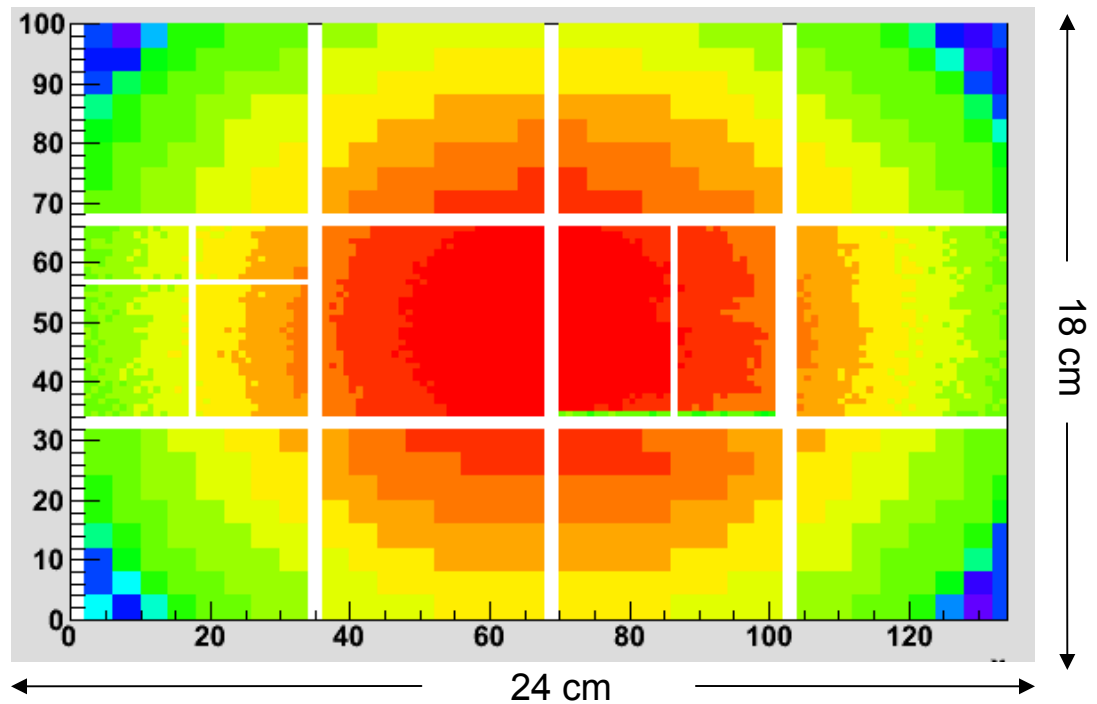
Target

32 of 32 strips working



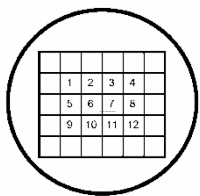
106 of 108 crystals working (~98%)

380 of 384 strips working (~99%)



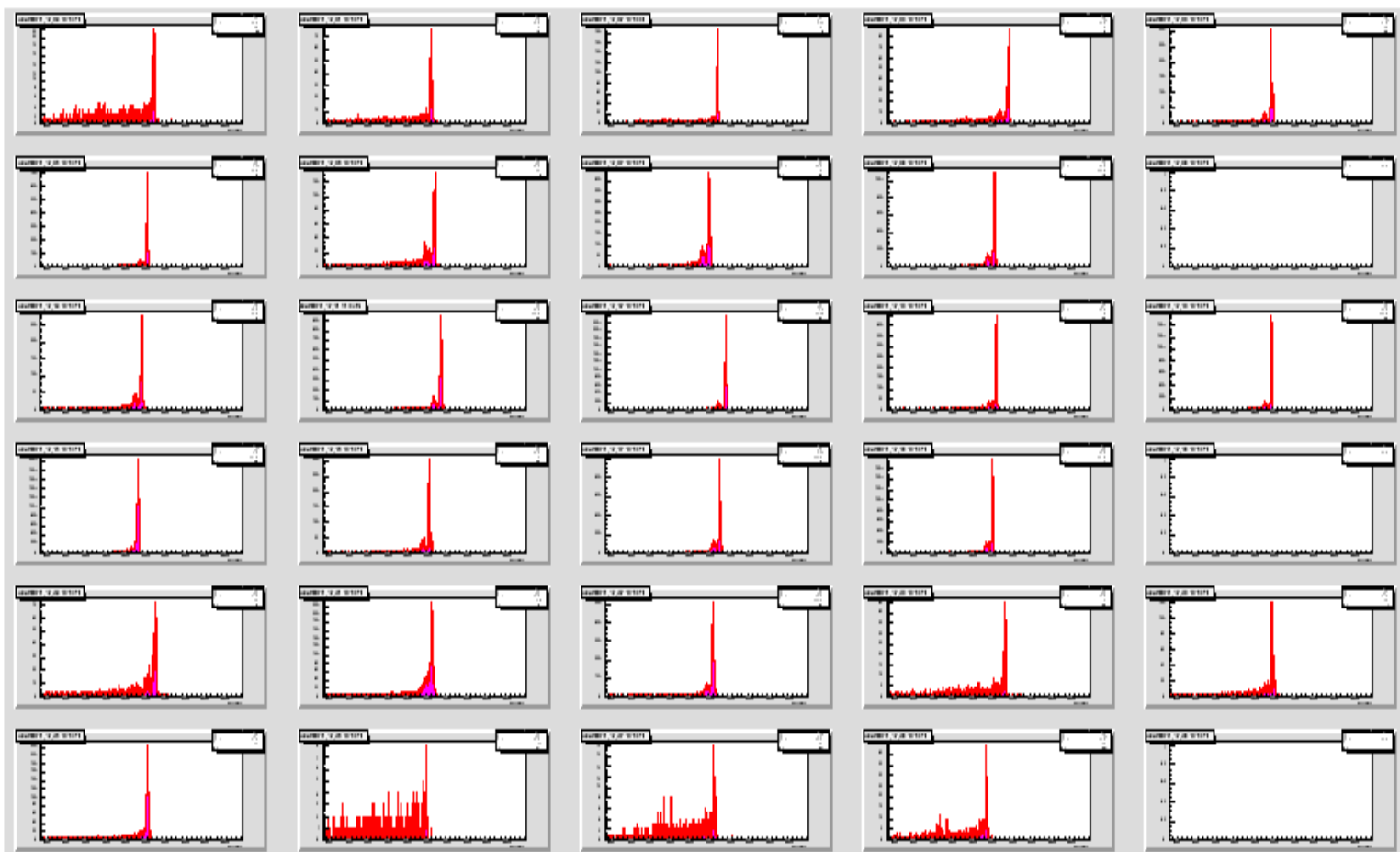
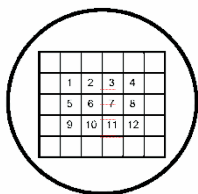
dE Spectra

DSSD 7 p-side uncalibrated



E Spectra

CsI 3,7,11 uncalibrated



Preliminary DSSD & CsI single spectra

^{64}Ni , 4 g/cm² matter

From LISE:

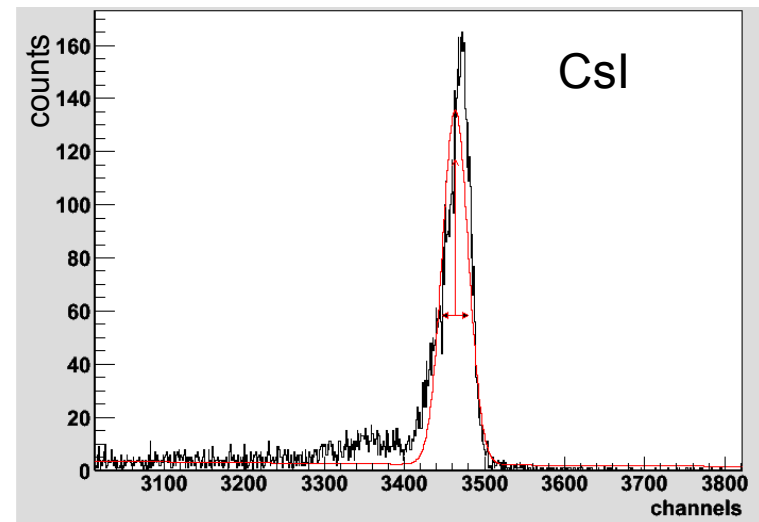
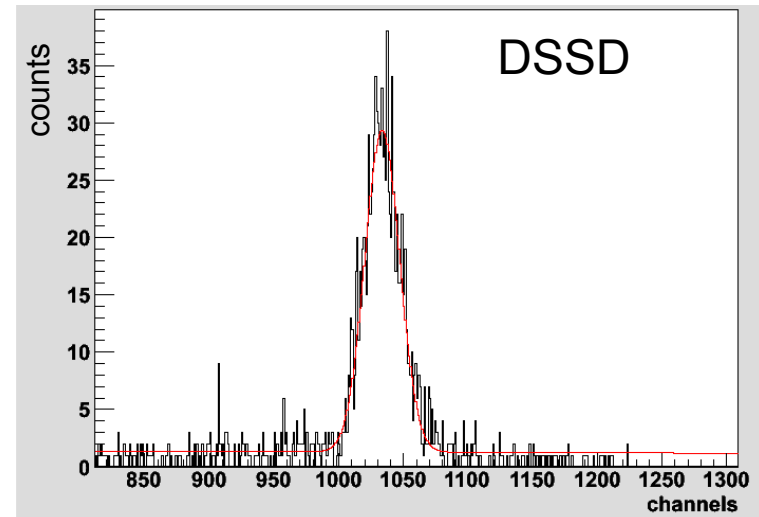
dE = 147 MeV, FWHM = 7 MeV, **4,5%**
E = 22,2 GeV, FWHM = 285 MeV, **1,3%**

dE

Pos: 1033,6
FWHM = 31,7 **3,1%**

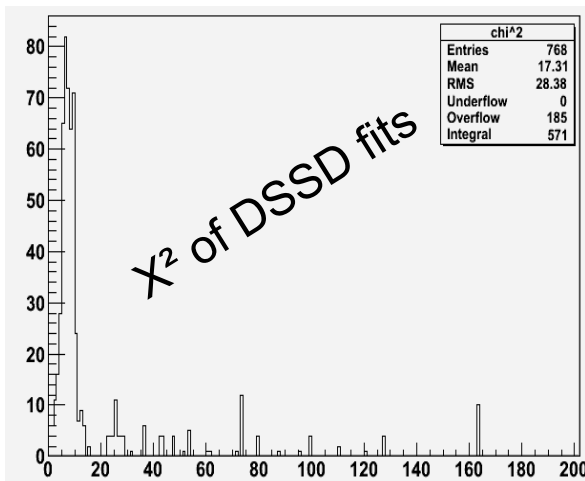
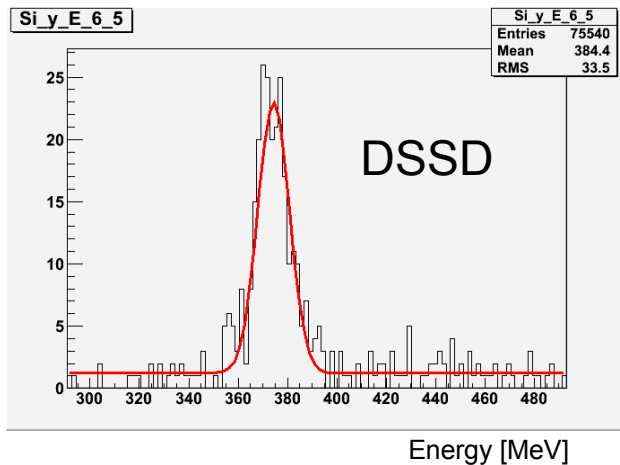
E

Pos: 3464
FWHM = 38,5 **1,1%**



Preliminary DSSD-calibration

^{64}Ni , 10 g/cm² matter



DSSD

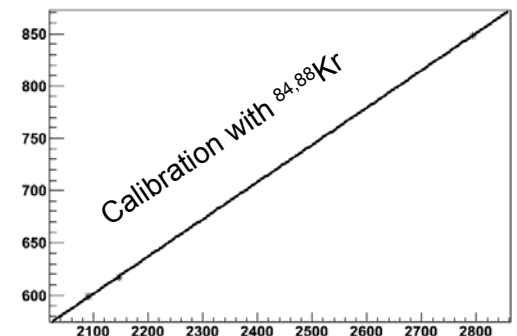
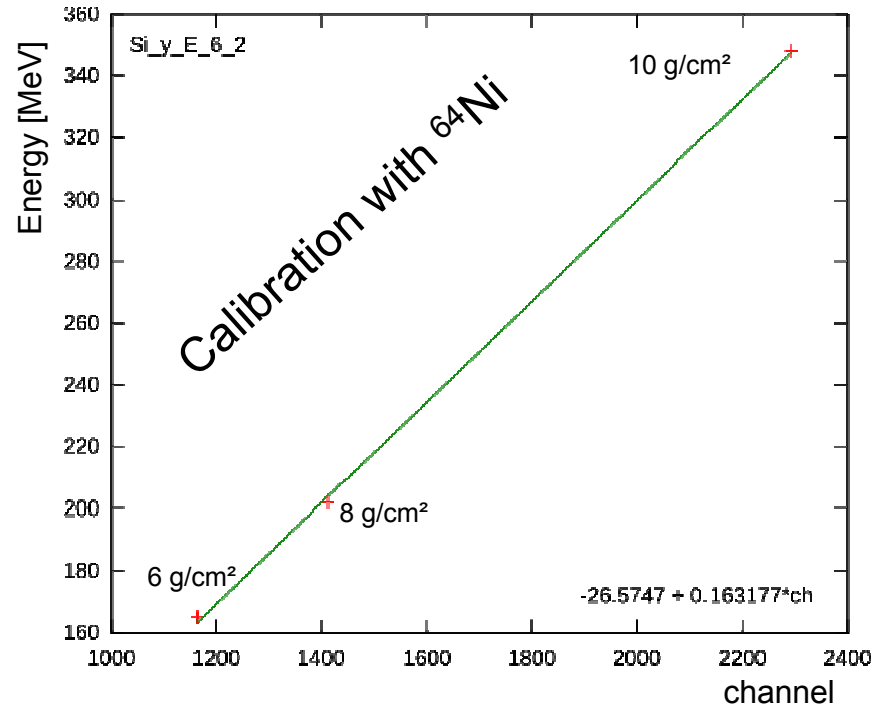
FWHM = 16 MeV

Expected from LISE: 16 MeV

4,6%

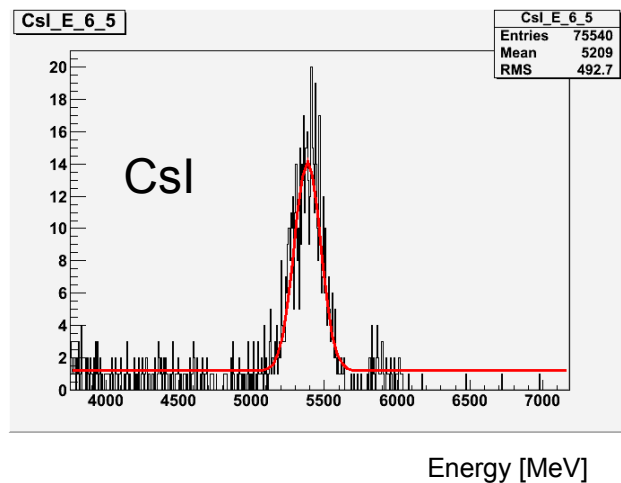
4,6 %

Quite a long time needed to calibrate
outer strips properly
~ 3 hrs / E-point (with primary beam)

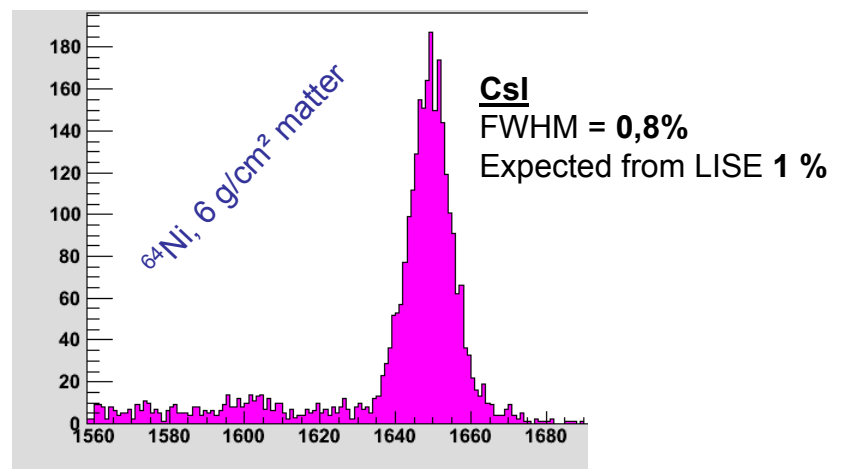
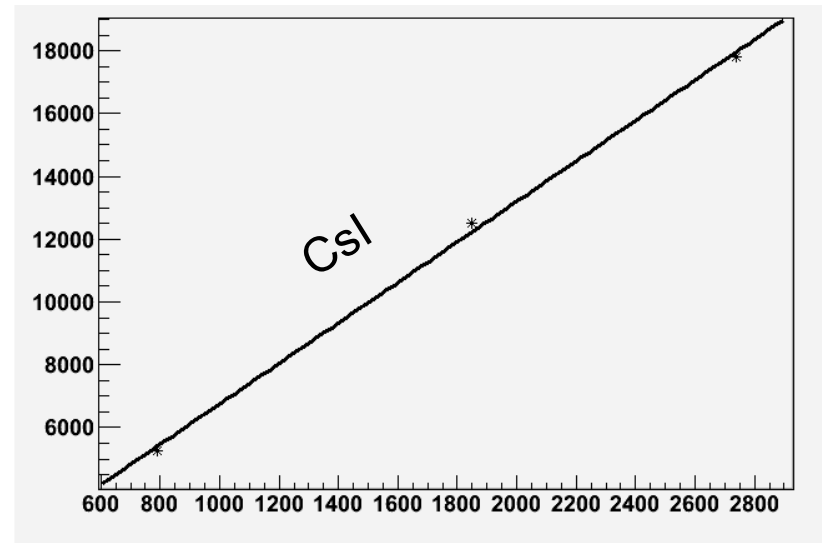


Preliminary CsI-calibration

^{64}Ni , 10 g/cm² matter

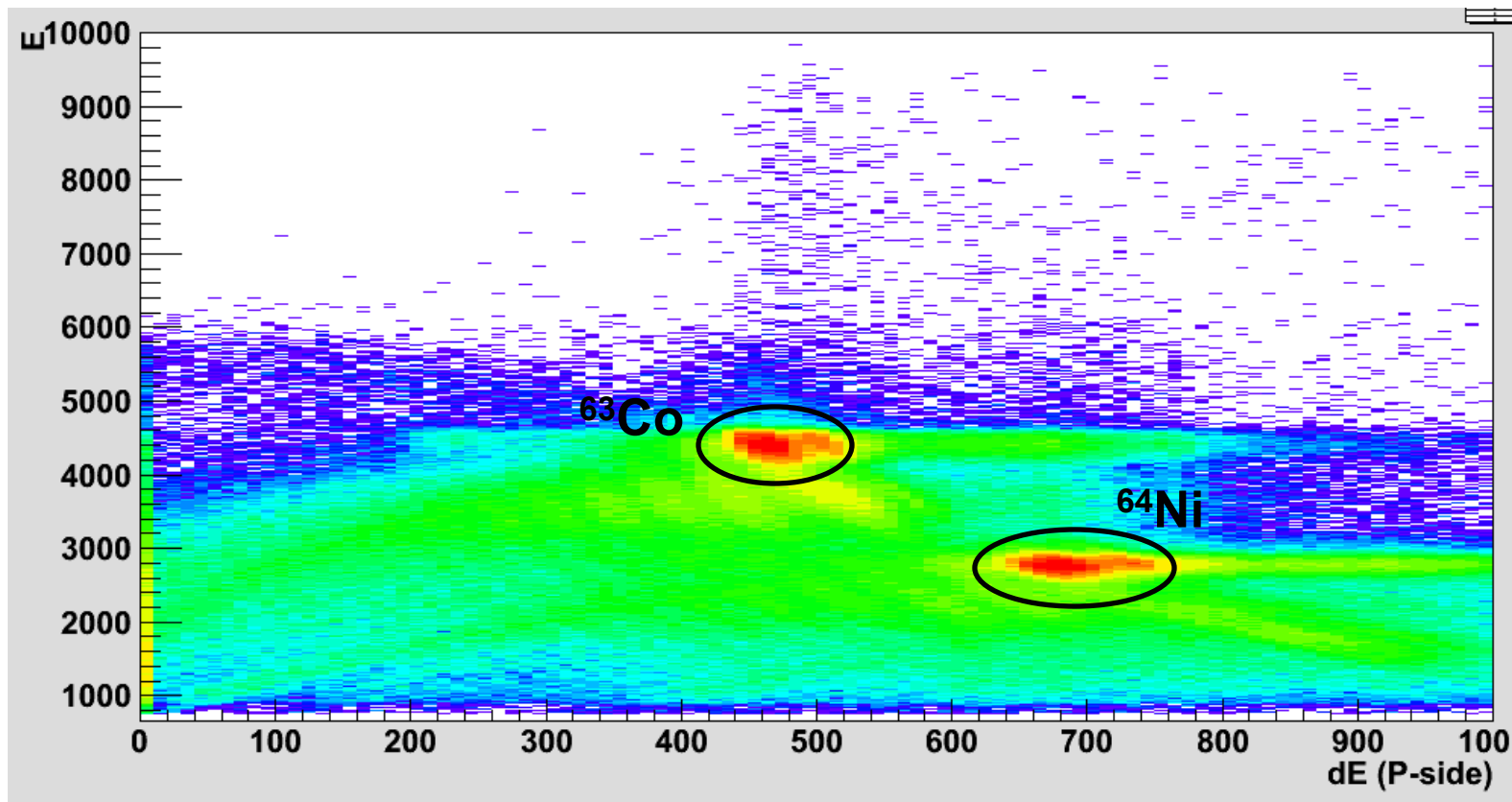


CsI
FWHM = 212 MeV **4,0%**
Expected from LISE: 335 MeV **6,4 %**



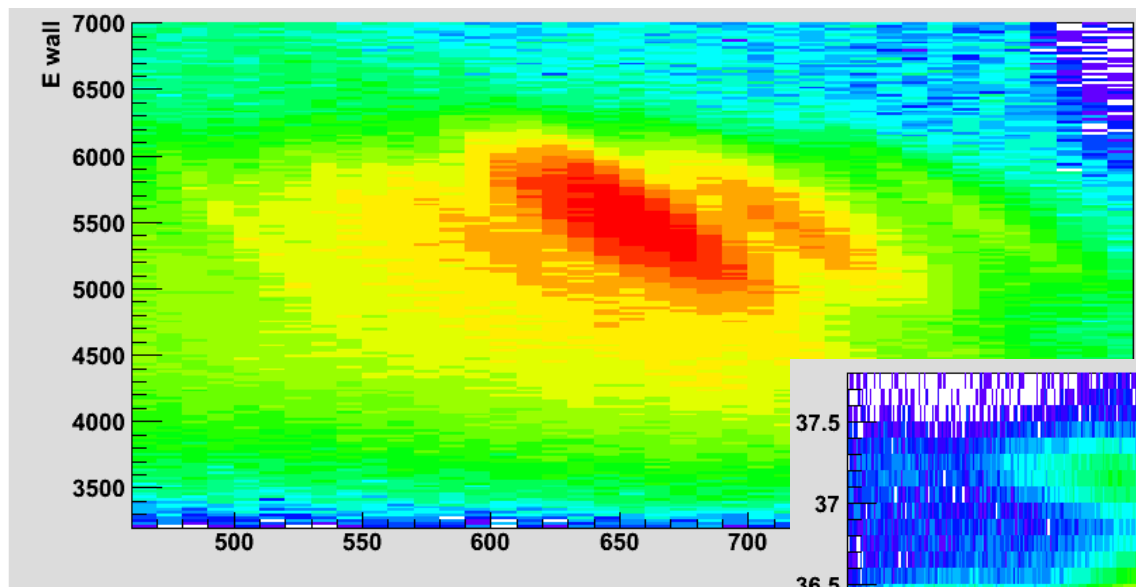
Preliminary dE-E

Result obtained with ^{64}Ni and ^{63}Co beam



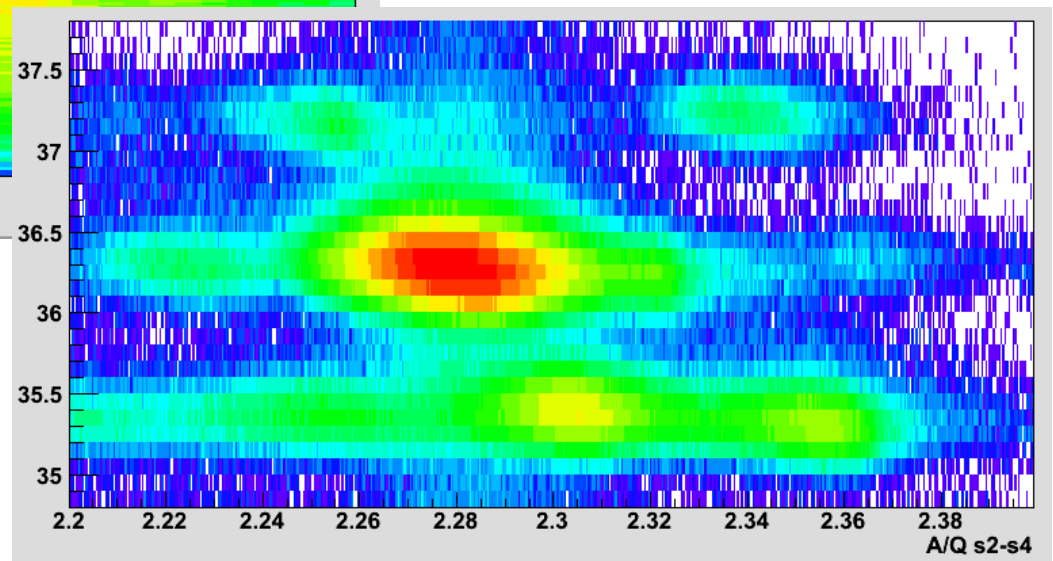
Preliminary dE-E

Result obtained with instable ^{84}Kr secondary fragment beam



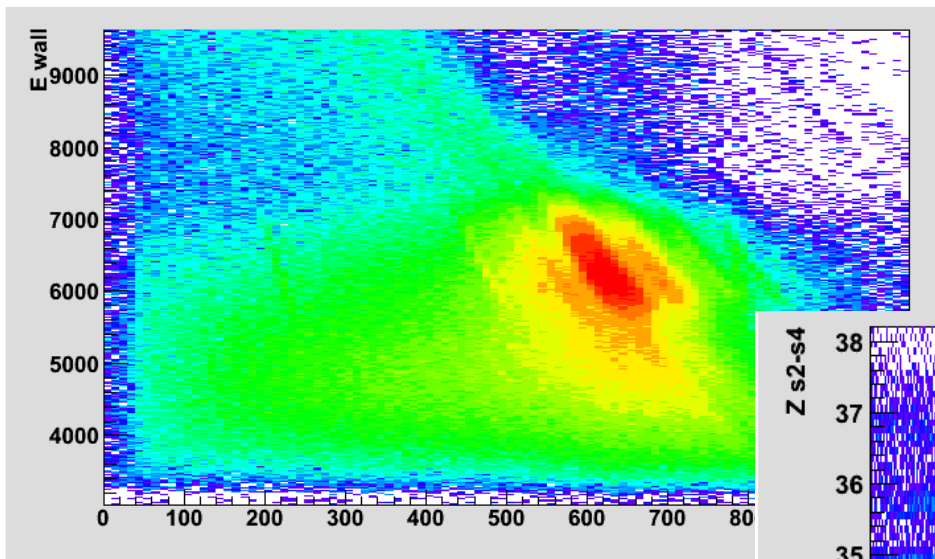
Particle id via
LYCCA ΔE -E

Particle id via
MUSIC and FRS-TOF



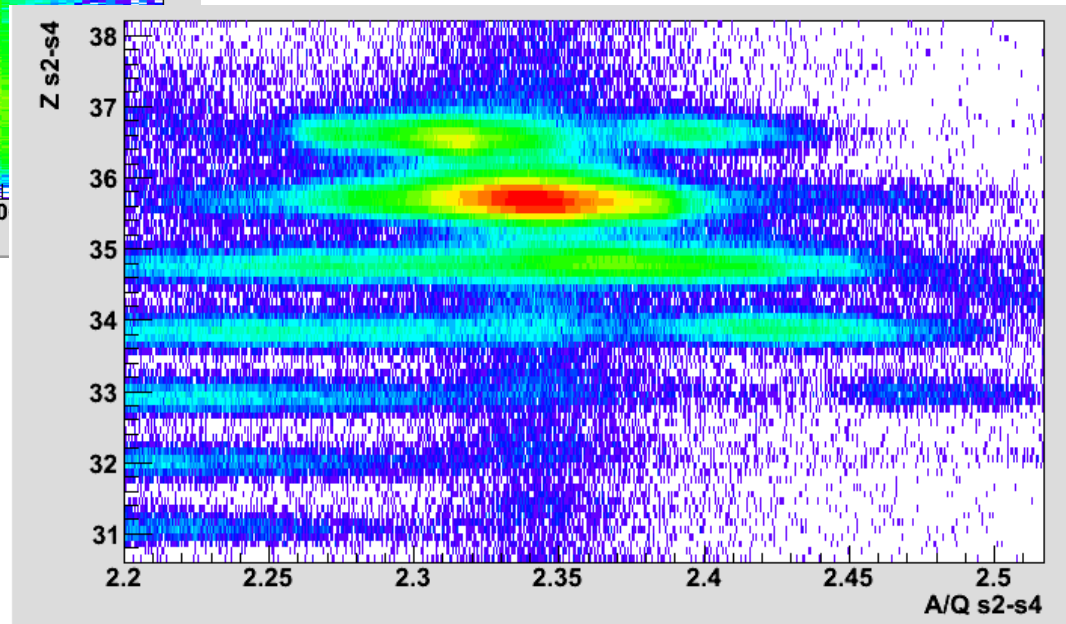
Preliminary dE-E

Result obtained with instable ^{88}Kr secondary fission beam



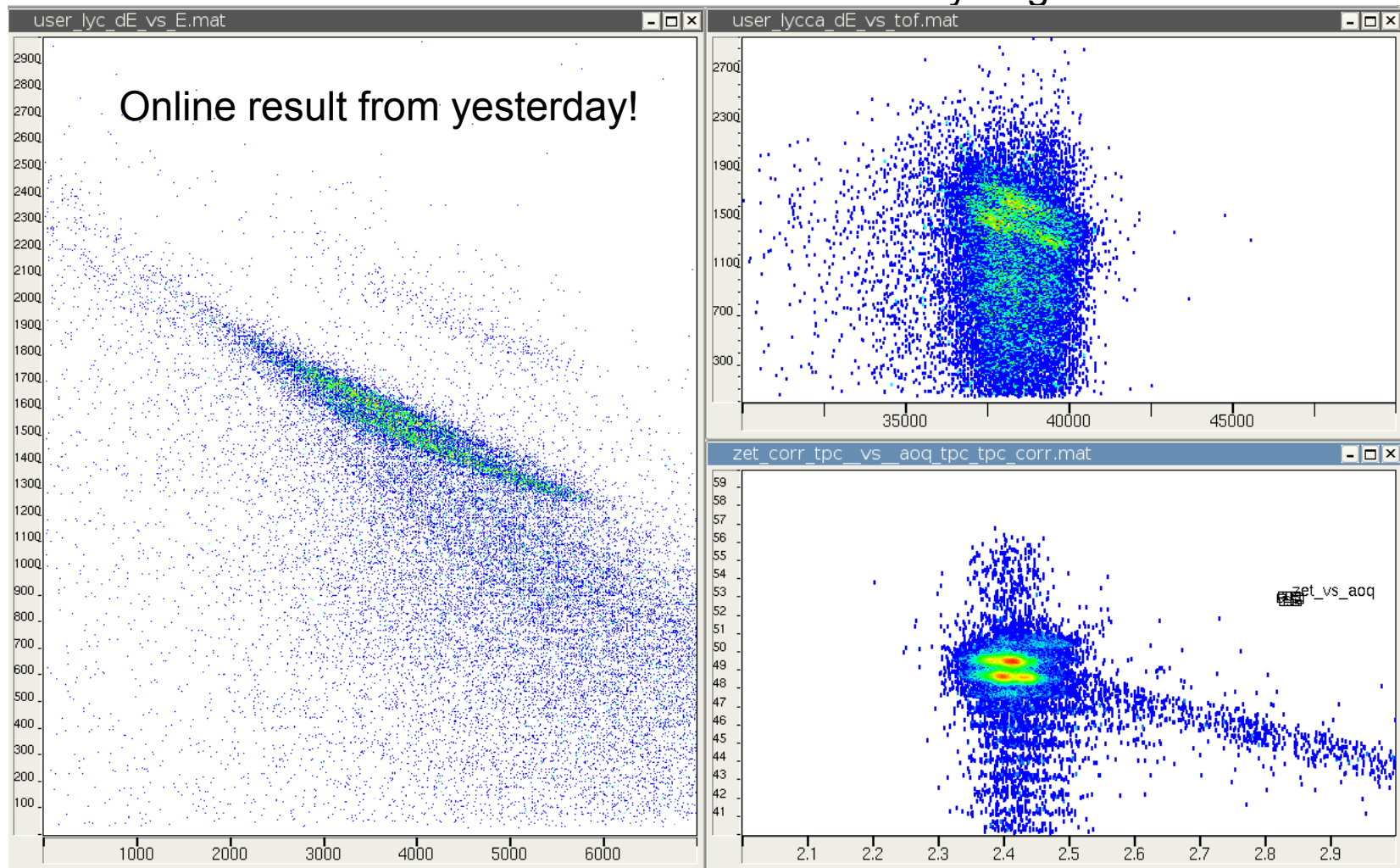
Particle id via
LYCCA ΔE -E

Particle id via
MUSIC and FRS-TOF

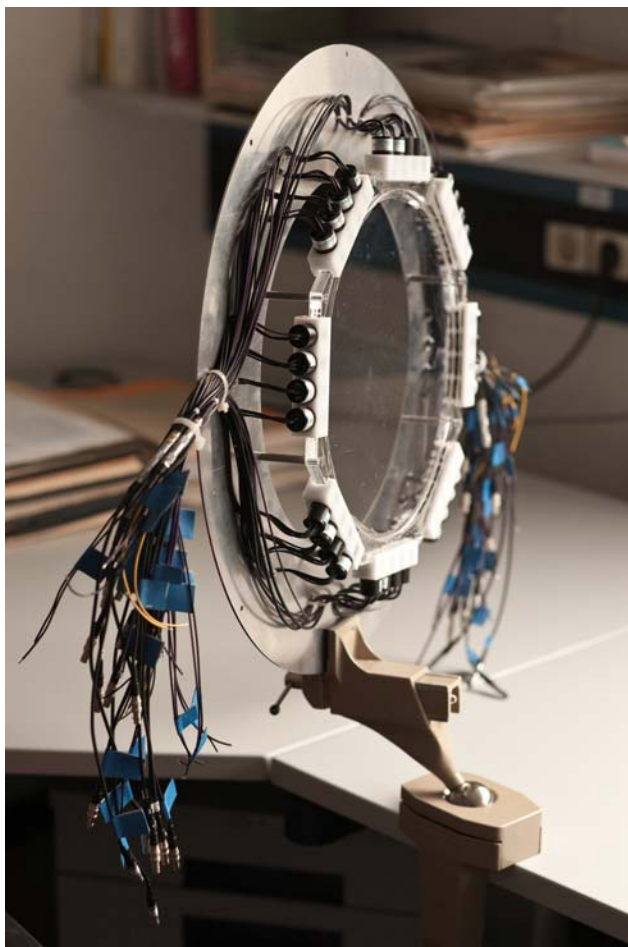


Preliminary dE-E

Result obtained with instable ^{104}Sn secondary fragment beam



Preliminary TOF



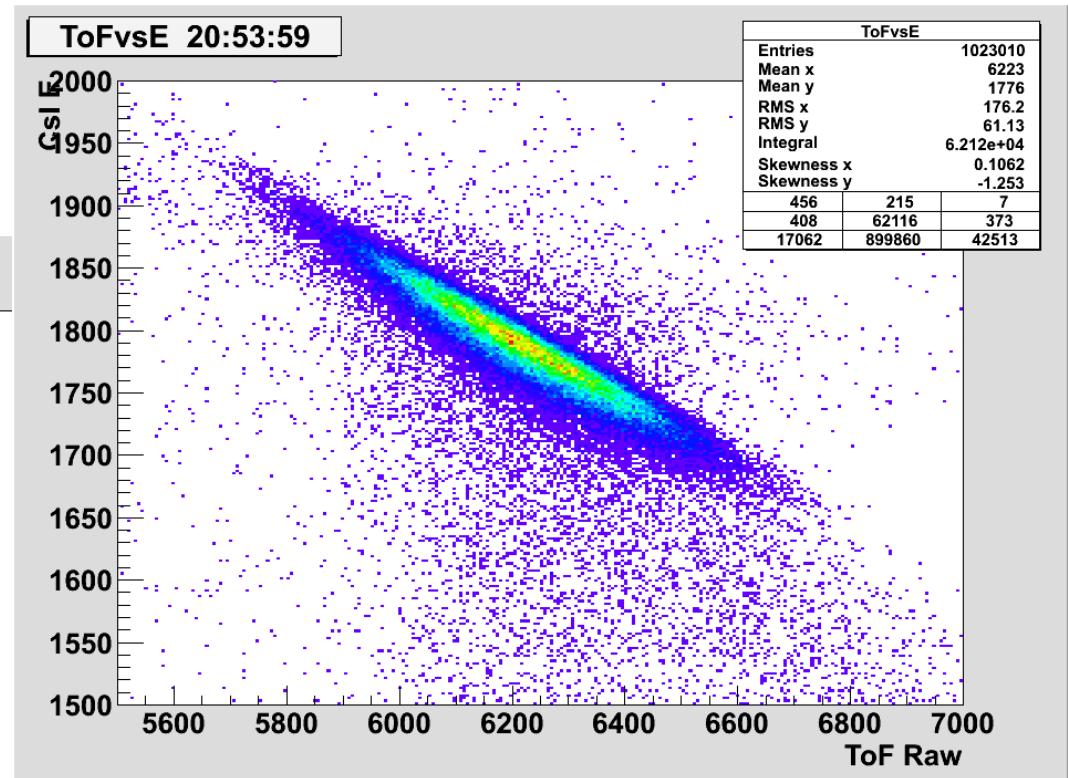
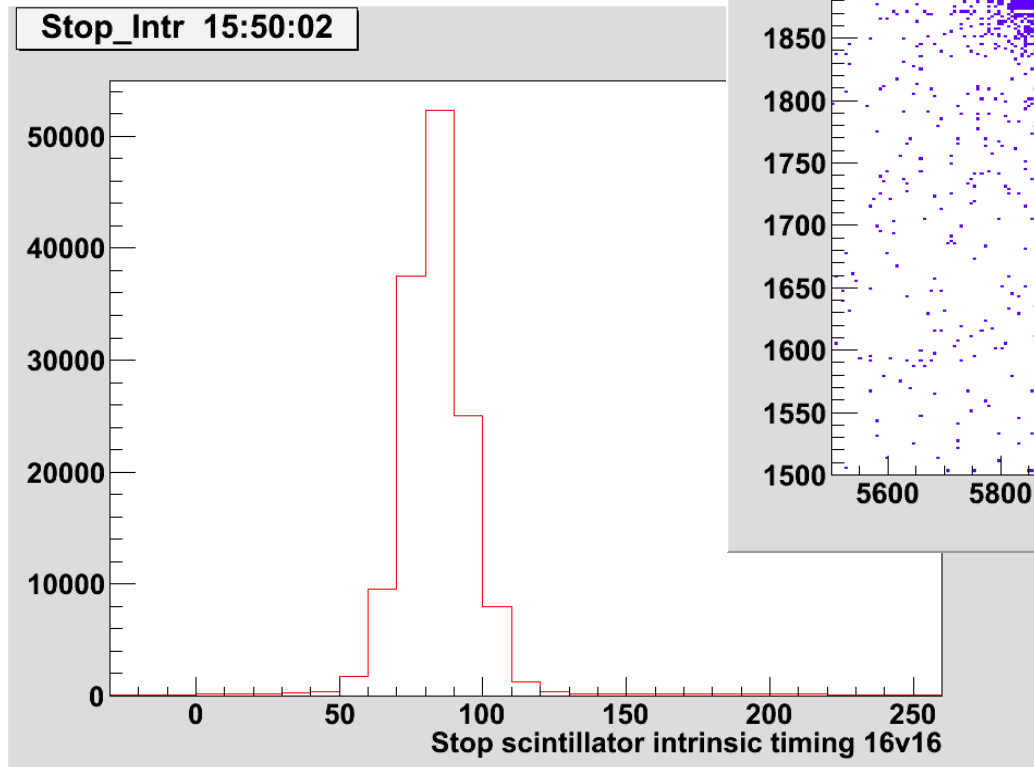
Robert Hoischen
Lund University

1-3 mm BC 420
32 PMT

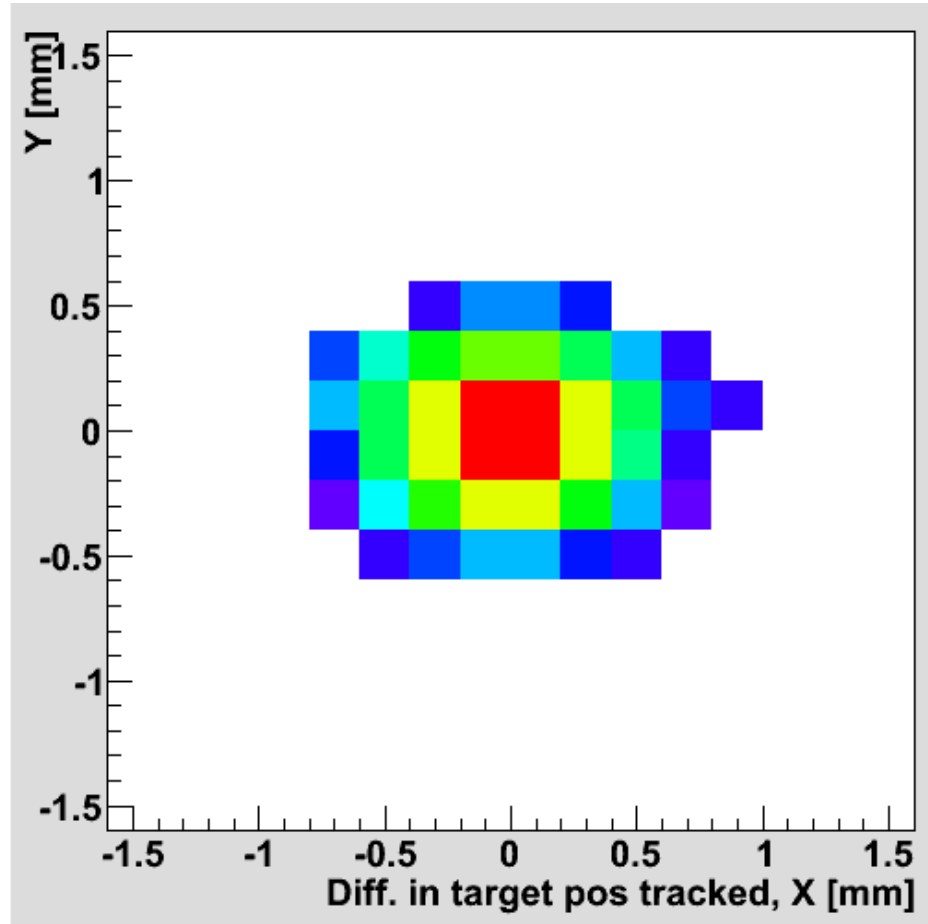
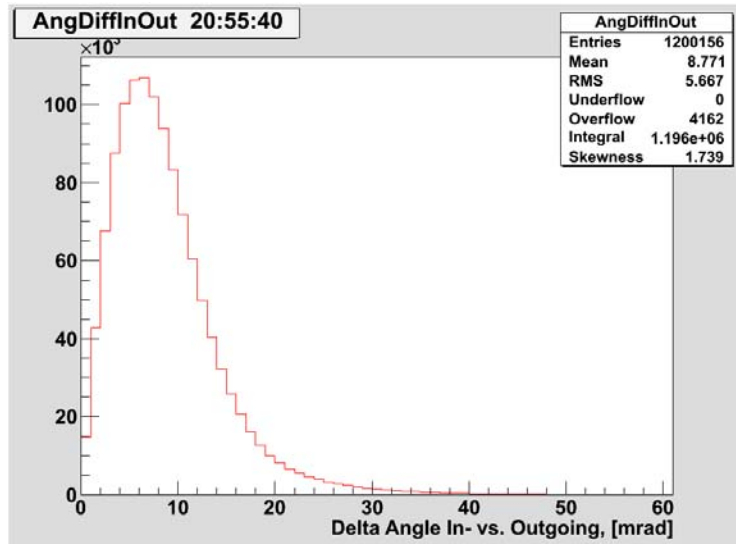


Preliminary TOF

12,5 ps intrinsic FWHM



Tracking accuracy



X/Y position on sec. TA:

[Extrapolation (TPC 2/3) -
Extrapolation (TA DSSD, wall DSSD)]



Timeline

Mar 2010

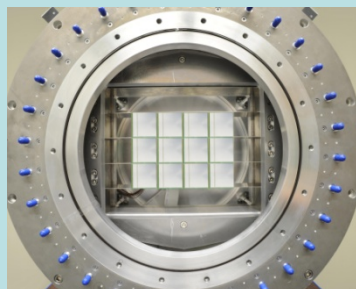
Sep./Oct 2010

Oct.10 – Feb. 11

2011

LYCCA-0
Commissioning

LYCCA-00
@ S272



Photomontage of LYCCA-0

$^{64}\text{Ni} / ^{63}\text{Co}$
(17.-24.09.)

• ^{86}Kr
(13.-17.10.)

PreSpec I @ FRS

Experiments:

• ^{88}Kr
(22.-28.10.)

• ^{104}Sn
(05.-10.11.)

• $^{25}\text{Si} / ^{29}\text{S}$
(02/2011)

AGATA @ FRS



LYCCA-Collaboration

A. Wendt, J. Taprogge, M. Braun, C. Goergen,
G. Pascovici, P. Reiter, S. Thiel

University of Cologne

D. Rudolph, P. Golubev, R. Hoischen
Lund University

M. A. Bentley, N. S. Bondili, L. Scruton
University of York

F. Schirru, A. Lohstroh
University of Surrey

PreSpec Collaboration
NUSTAR Simulation group

