FIRST VIEW AT THE FORWARD PRESAMPLER DETECTOR AT ZEUS

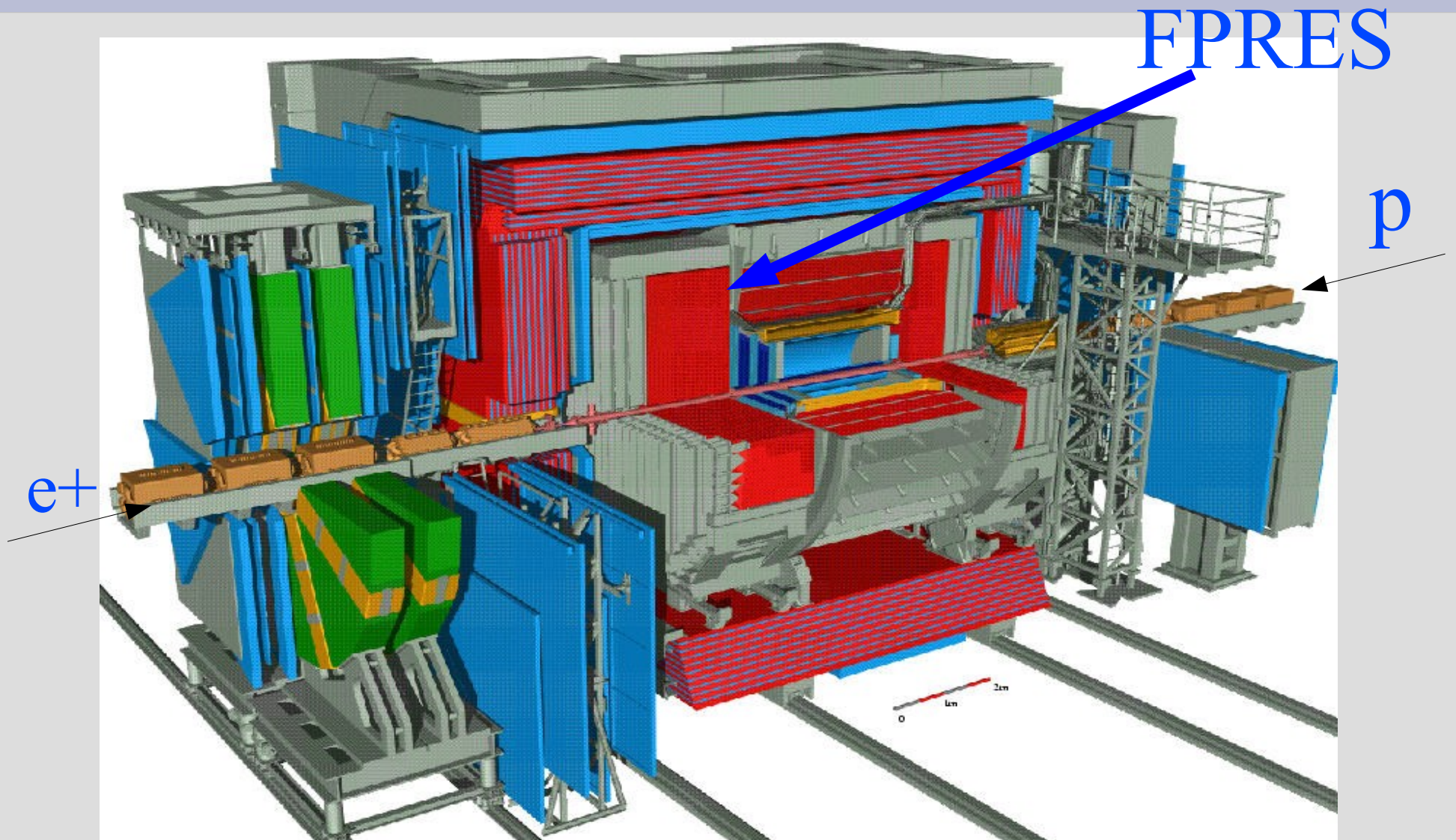**SAUL BECEIRO NOVO** **18.09.06** **1/2000**

OVERVIEW

- FPRES detector at ZEUS
- DATA SELECTION
- FCAL-FPRES DATA COMPARISON
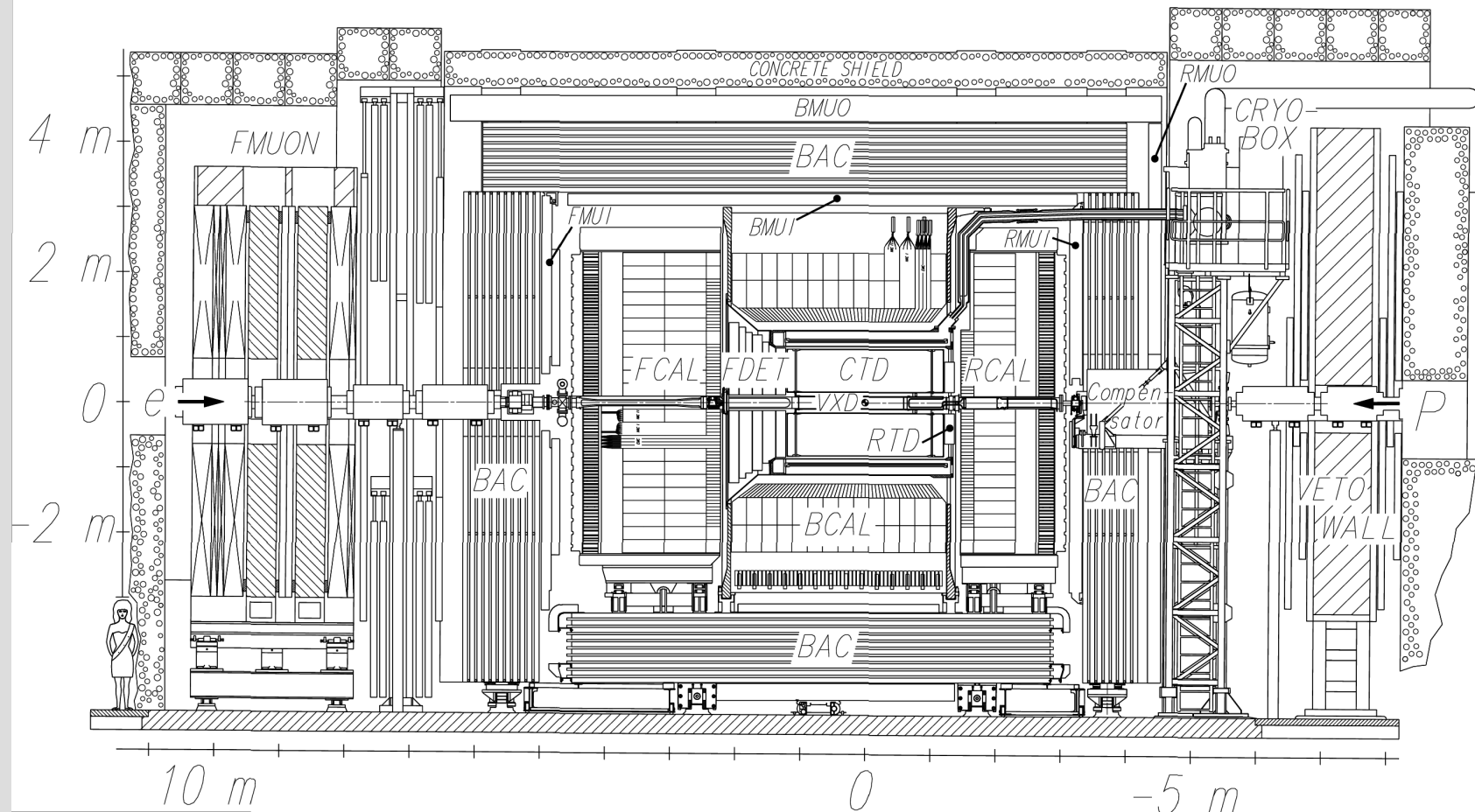- MAPPING TEST OF FPRES
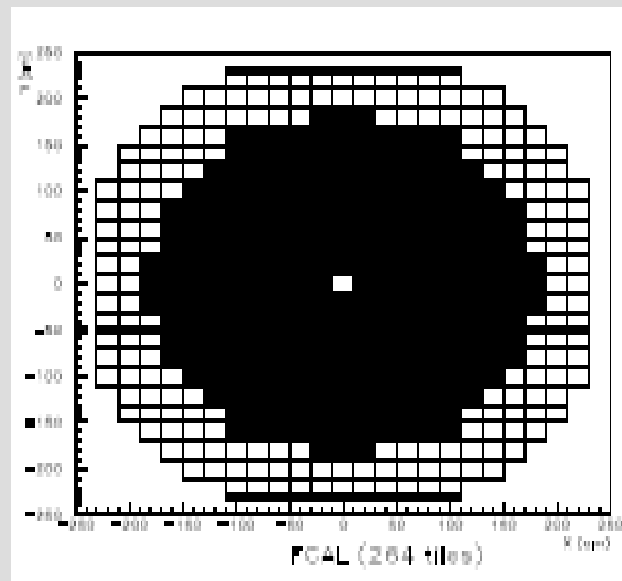
ZEUS DETECTOR

ZEUS DETECTOR

Overview of the ZEUS Detector
(longitudinal cut)

FORWARD PRESAMPLER

- Measurement of energy degradation
- Layer scintillator tiles
- Combined with the calorimeter allows to measure the event-by-event energy loss

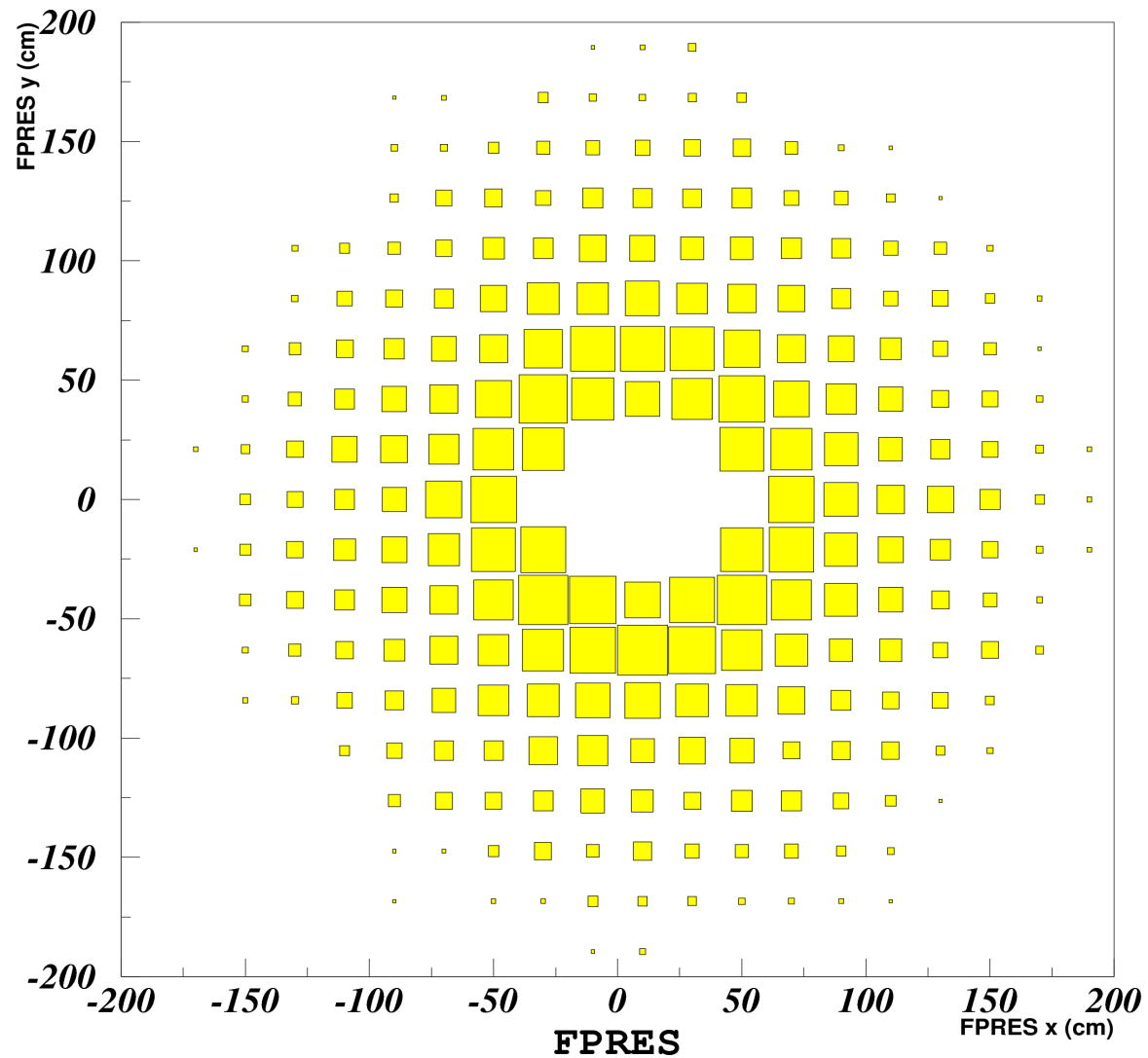Front view of FCAL, the shade region corresponds to the FPRES

DATA SELECTION

- ZEUS data from 1999
- Proton-dissociative J/Ψ production
- Statistic high enough for energy deposit in forward direction
- Background events for J/Ψ production are also used in this analysis
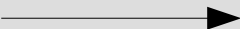
FORWARD PRESAMPLER
hit map

EVENT SELECTION

- Vertex located near the interaction point
- The first ring around the pipe (r=40cm) not used
- Only forward calorimeter and presampler data
- One track events $\longrightarrow$

EVENT SELECTION
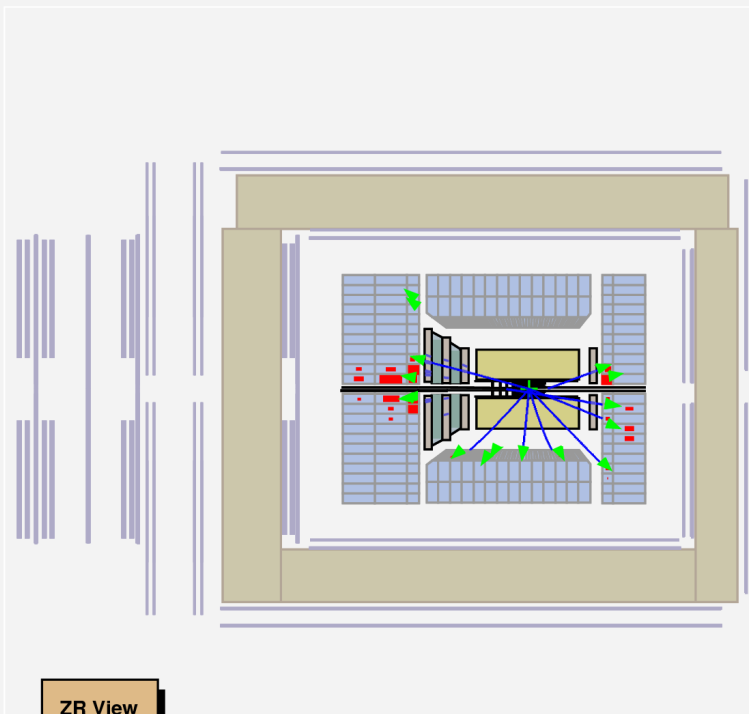
EVENT SELECTION

Zeus Run 32260 Event 8541   date: 4-03-1999   time: 00:52:59

$E=50.4$ GeV
$E_r=-0.812$ GeV
phi=1.45
$E_e^{SIRA}=18$ GeV
$y_{e,DA}^{SIRA}=0.29$

$E_t=9.44$ GeV
$p_t=1.7$ GeV
$t_f=-3.01$ ns
$\theta_e^{SIRA}=2.98$
$Q_{e,DA}^{2,SIRA}=13.43$ GeV^2

$E-p_z=44$ GeV
$p_x=0.197$ GeV
$t_b=-1.26$ ns
$\phi_e^{SIRA}=1.75$

$E_f=0.374$ GeV
$p_y=1.69$ GeV
$t_r=-2.07$ ns
$Prob_e^{SIRA}=0.994$

$E_b=0.465$ GeV
$p_z=6.43$ GeV
$t_g=-2.58$ ns
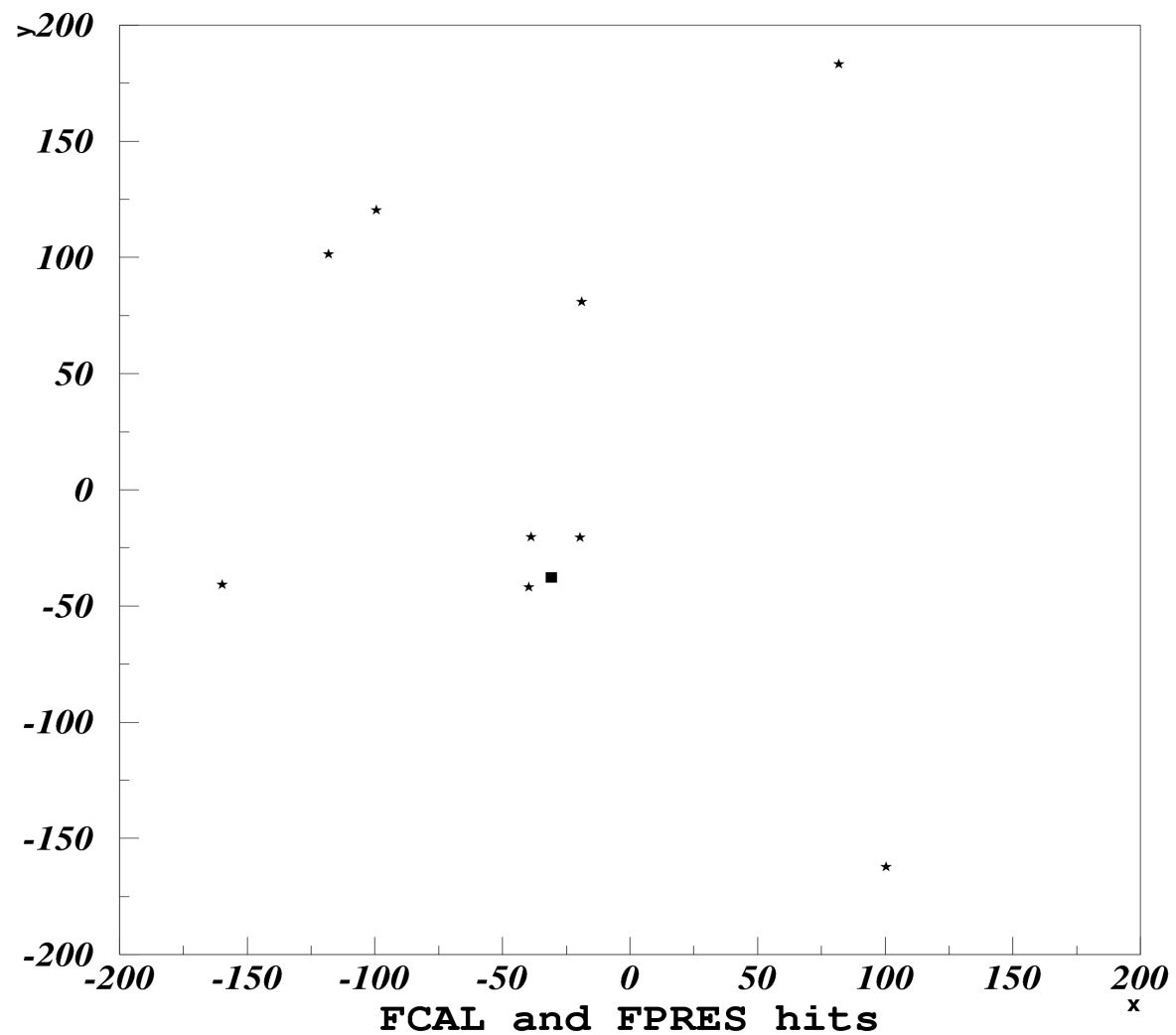$x_{e,DA}^{SIRA}=0.00$

XY View

ZR View

vertex:
|z|<60
x^2+y^2<0.7
pseudorapidity:
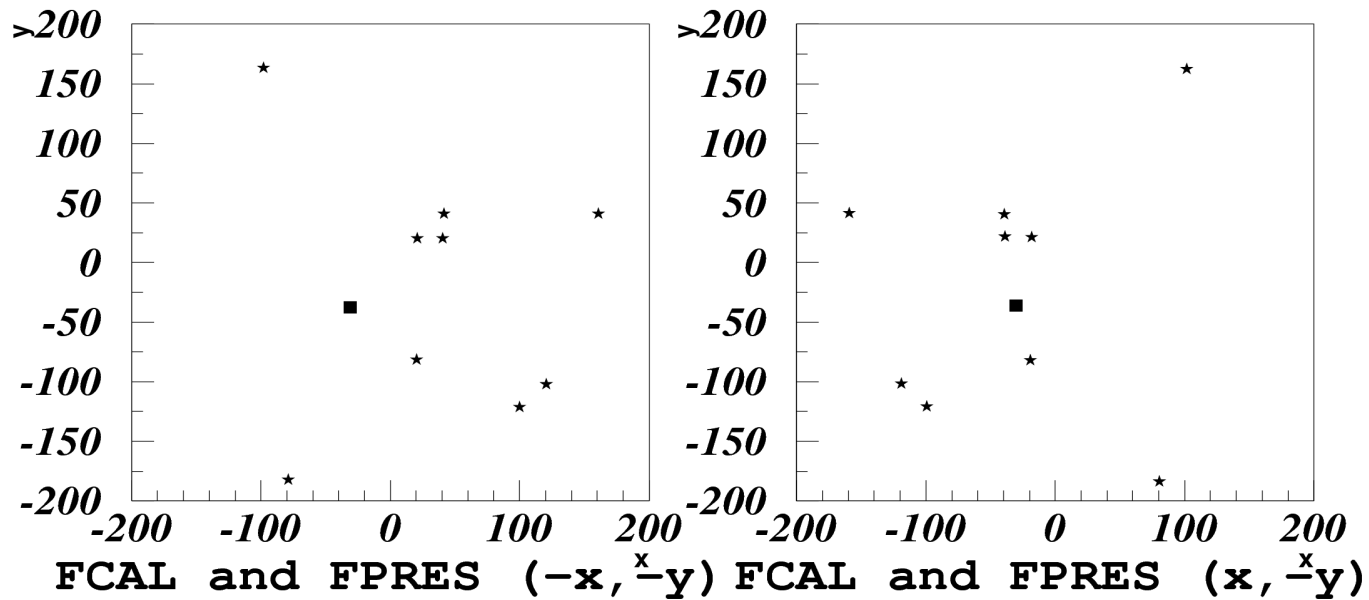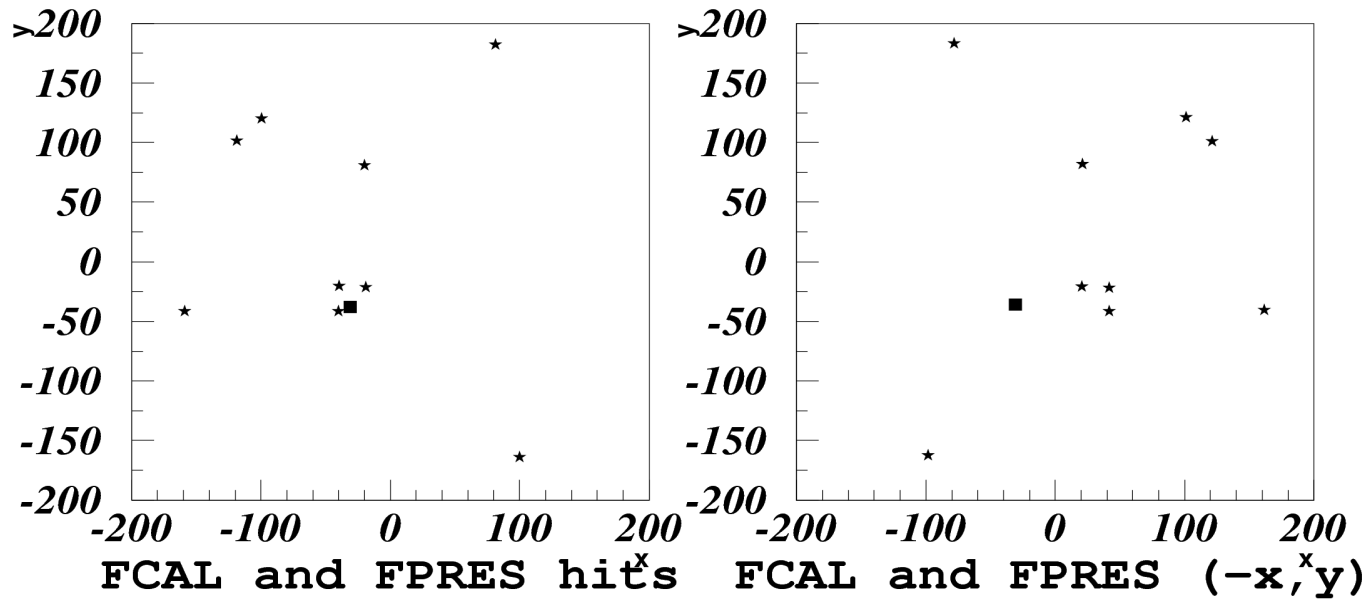η>1.1

FCAL and FPRES hit map

MINIMAL DISTANCE
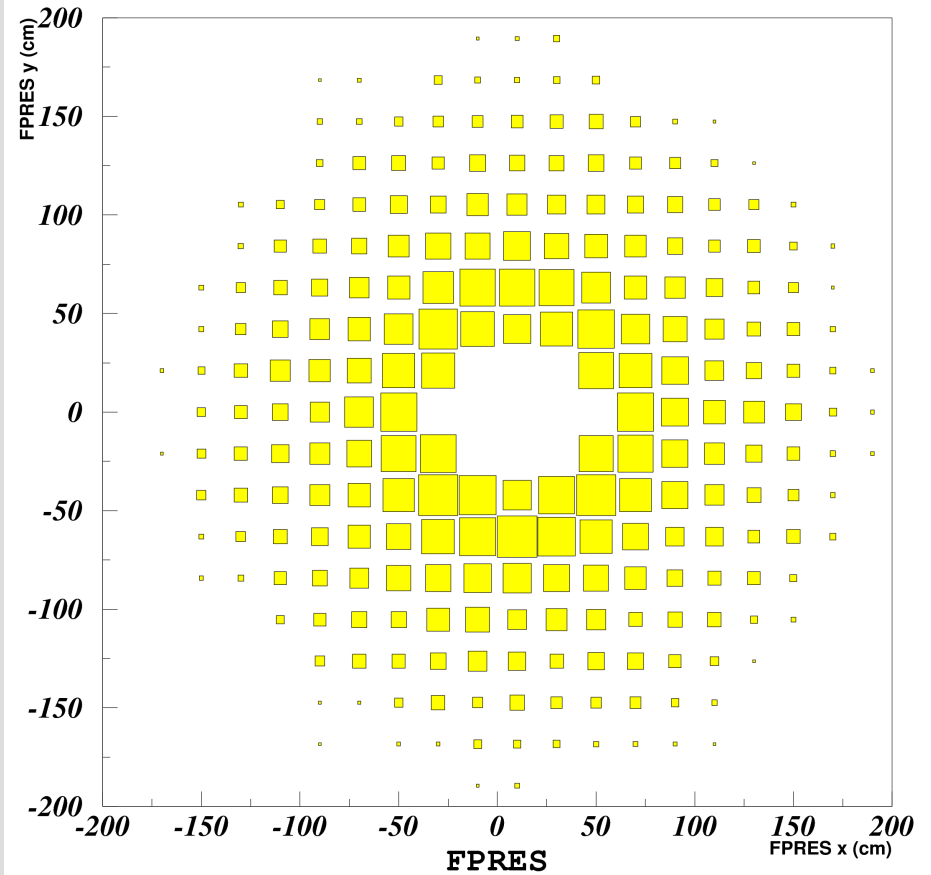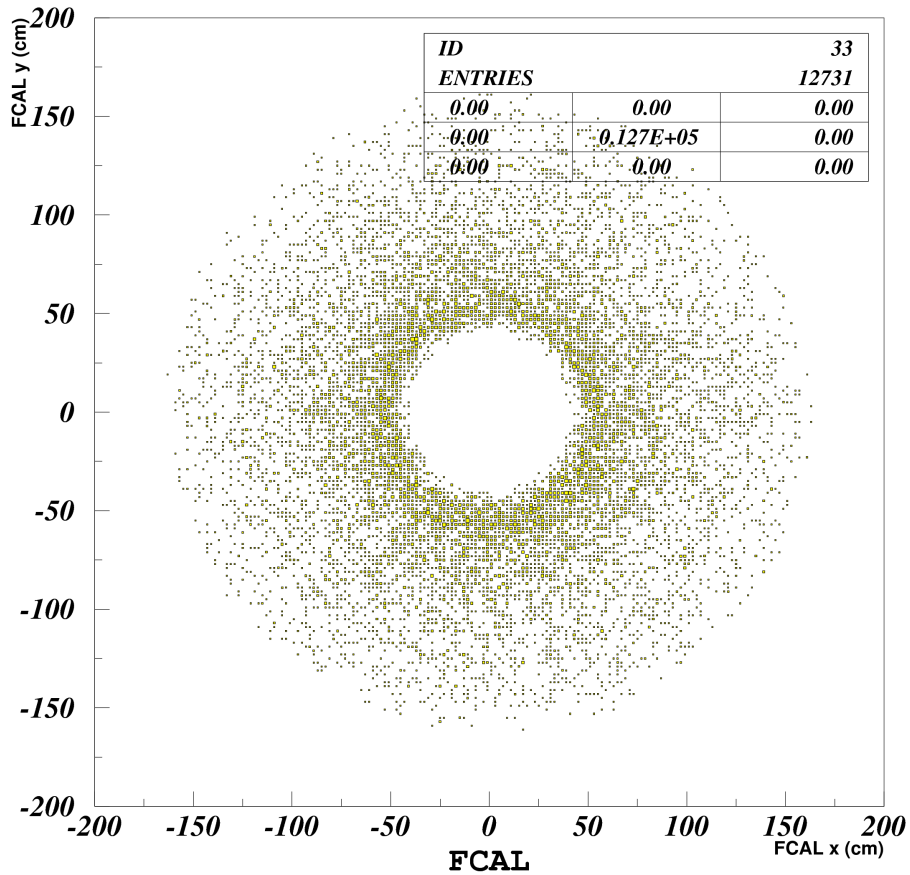
FCAL and FPRES hits

MINIMAL DISTANCE

MIRRORING QUADRANTS

FCAL and FPRES hits   FCAL and FPRES (−x, y)
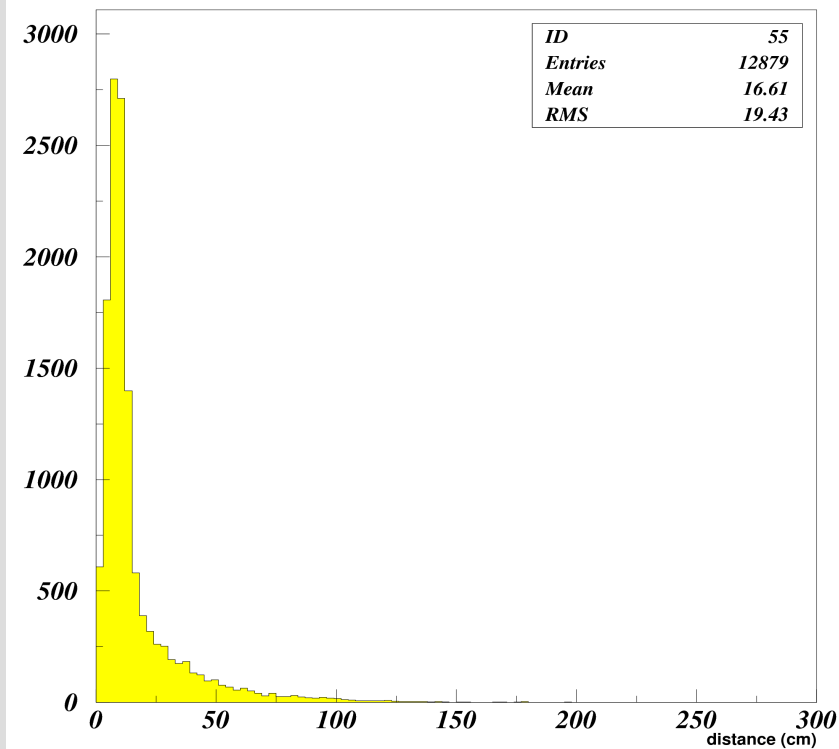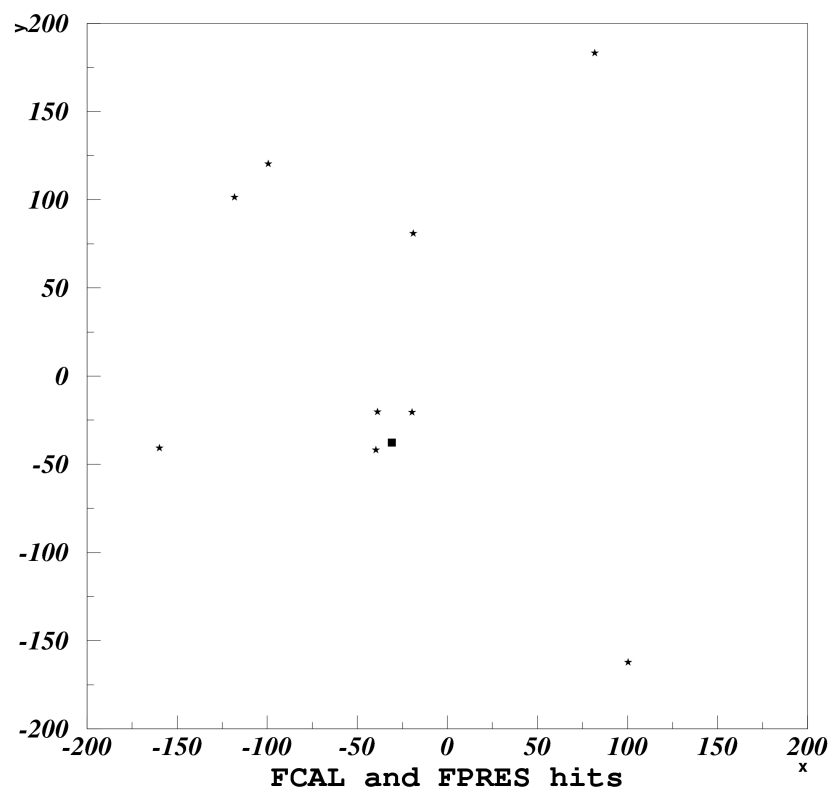
FCAL and FPRES (−x, −y)   FCAL and FPRES (x, −y)
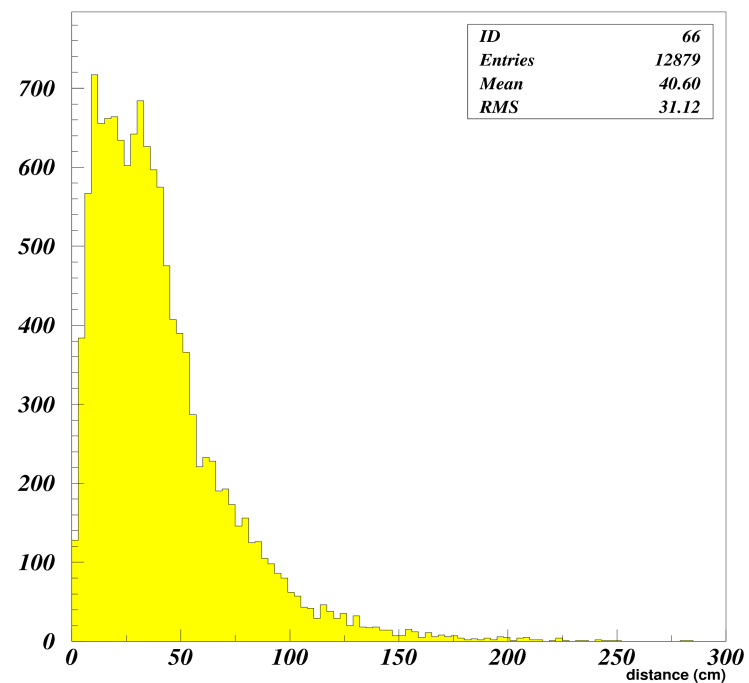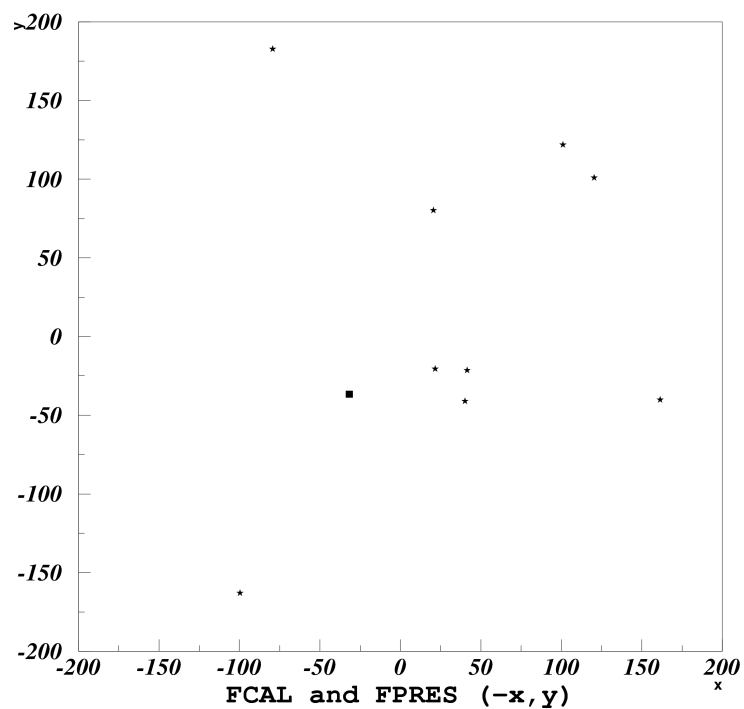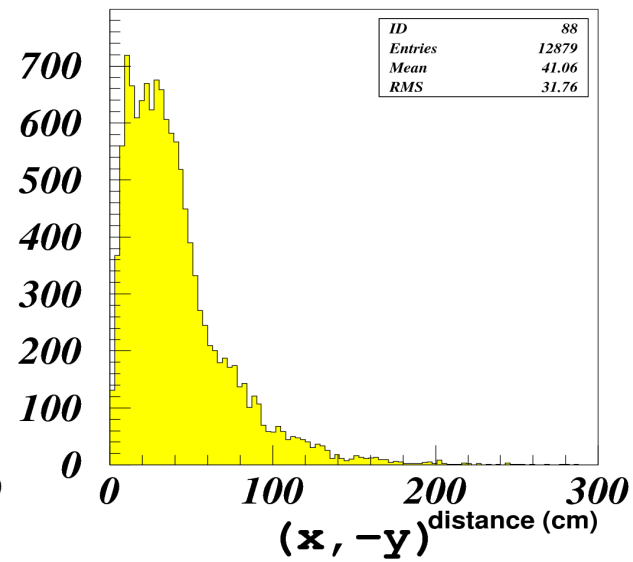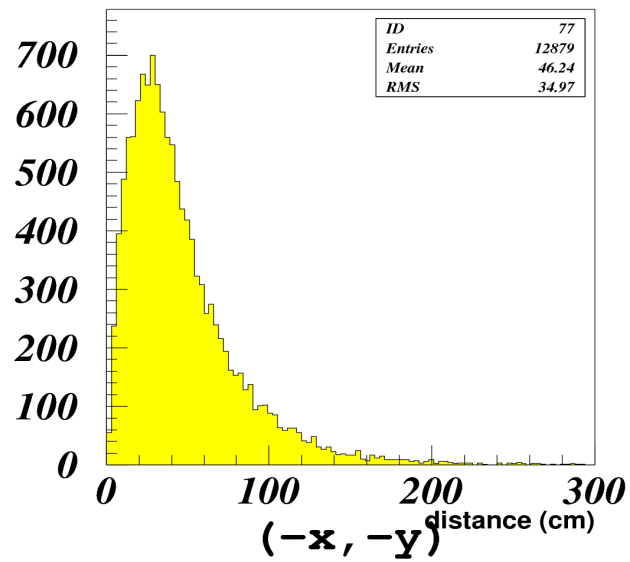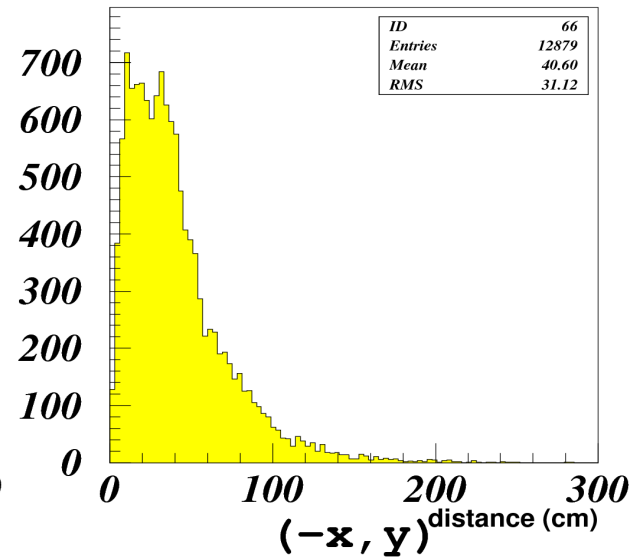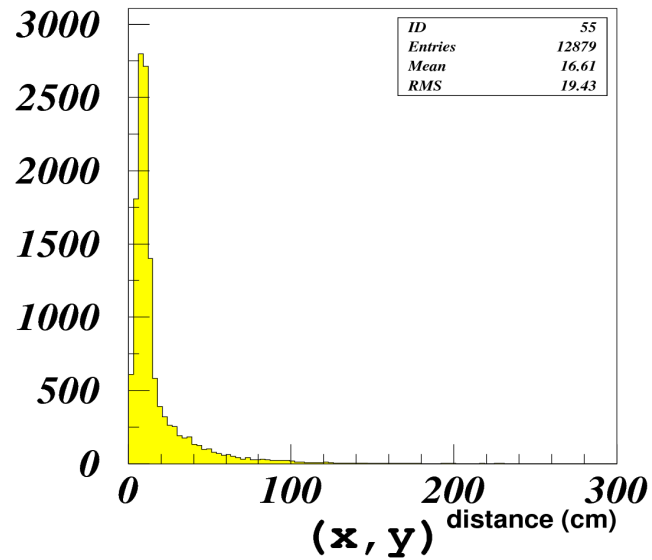
DISTANCE MIRROR (-X,Y)
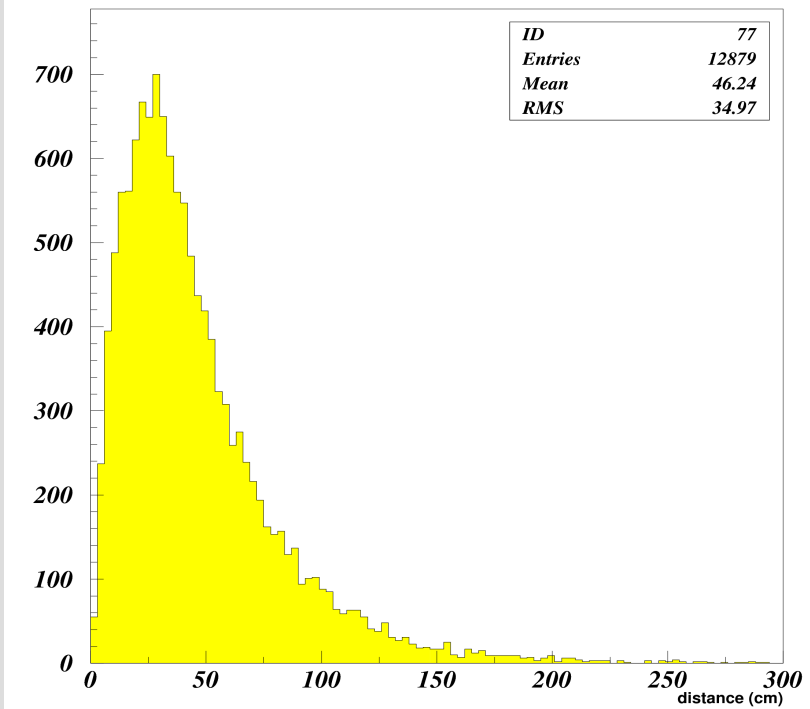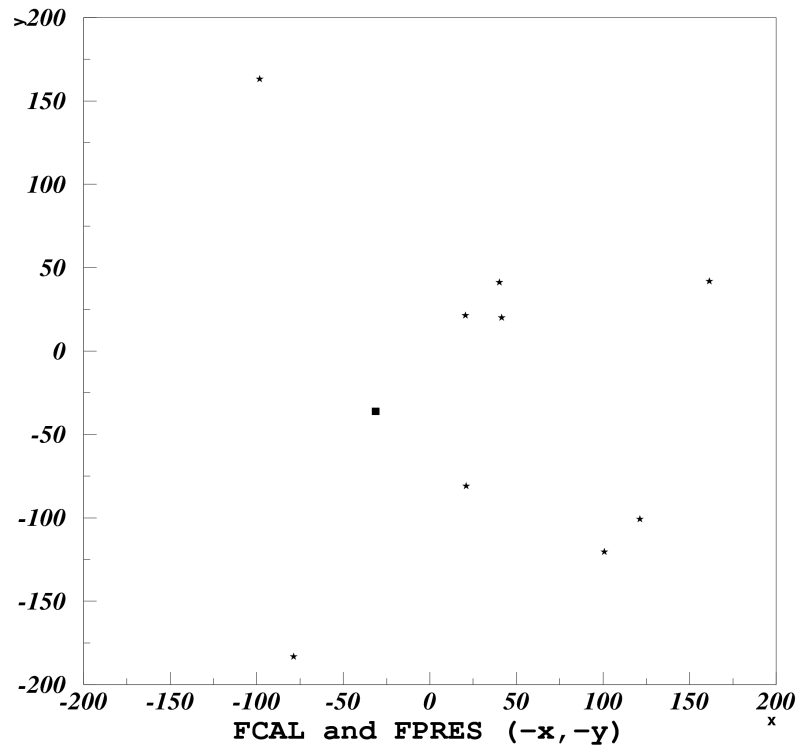
DISTANCE MIRROR (-X,-Y)

DISTANCE MIRROR (X,-Y)
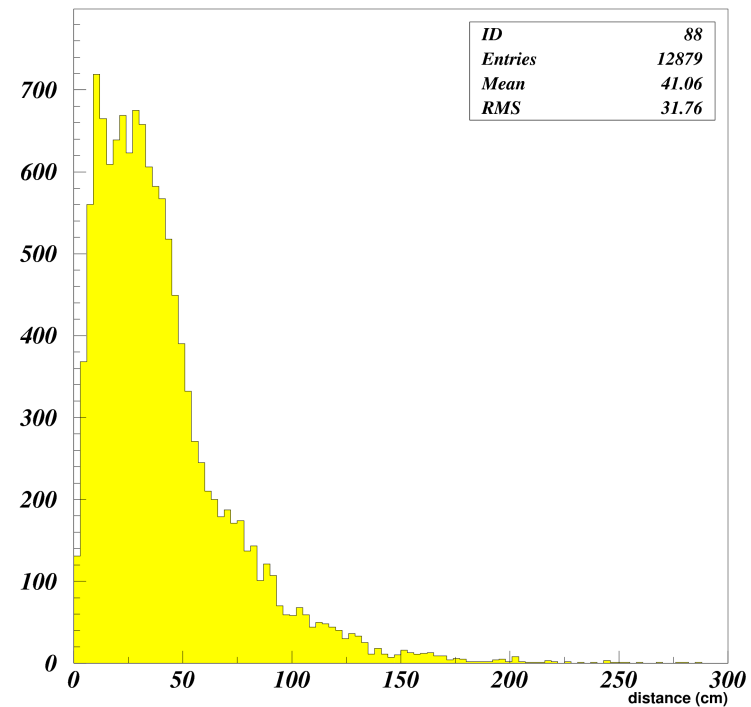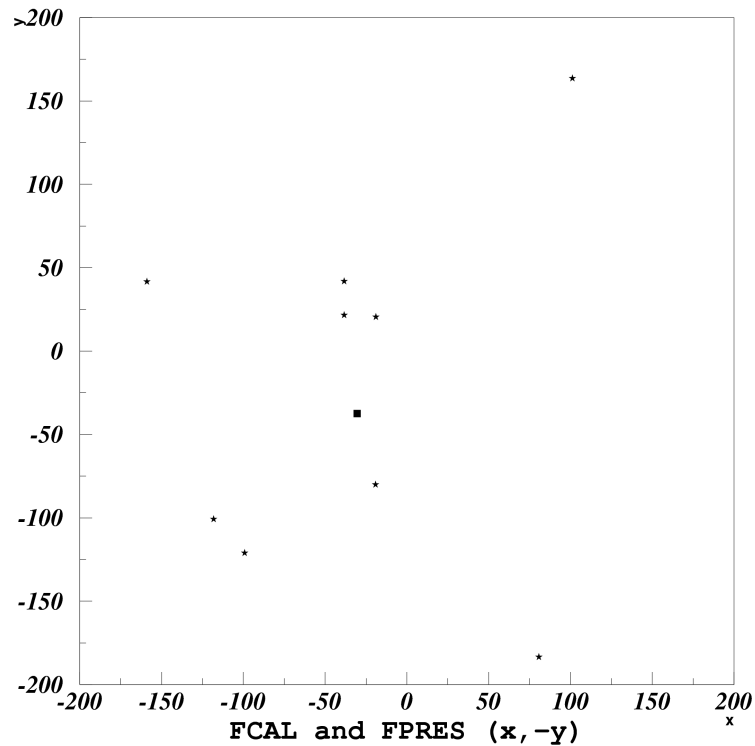
RESULTS

SUMMARY

- FPRES at ZEUS
- Events with only one forward track
- Minimum distance between track hit in FCAL and FPRES hit
- No mapping problem found!!! ... for the moment