# TPOL MC tunning with Table Scan Data

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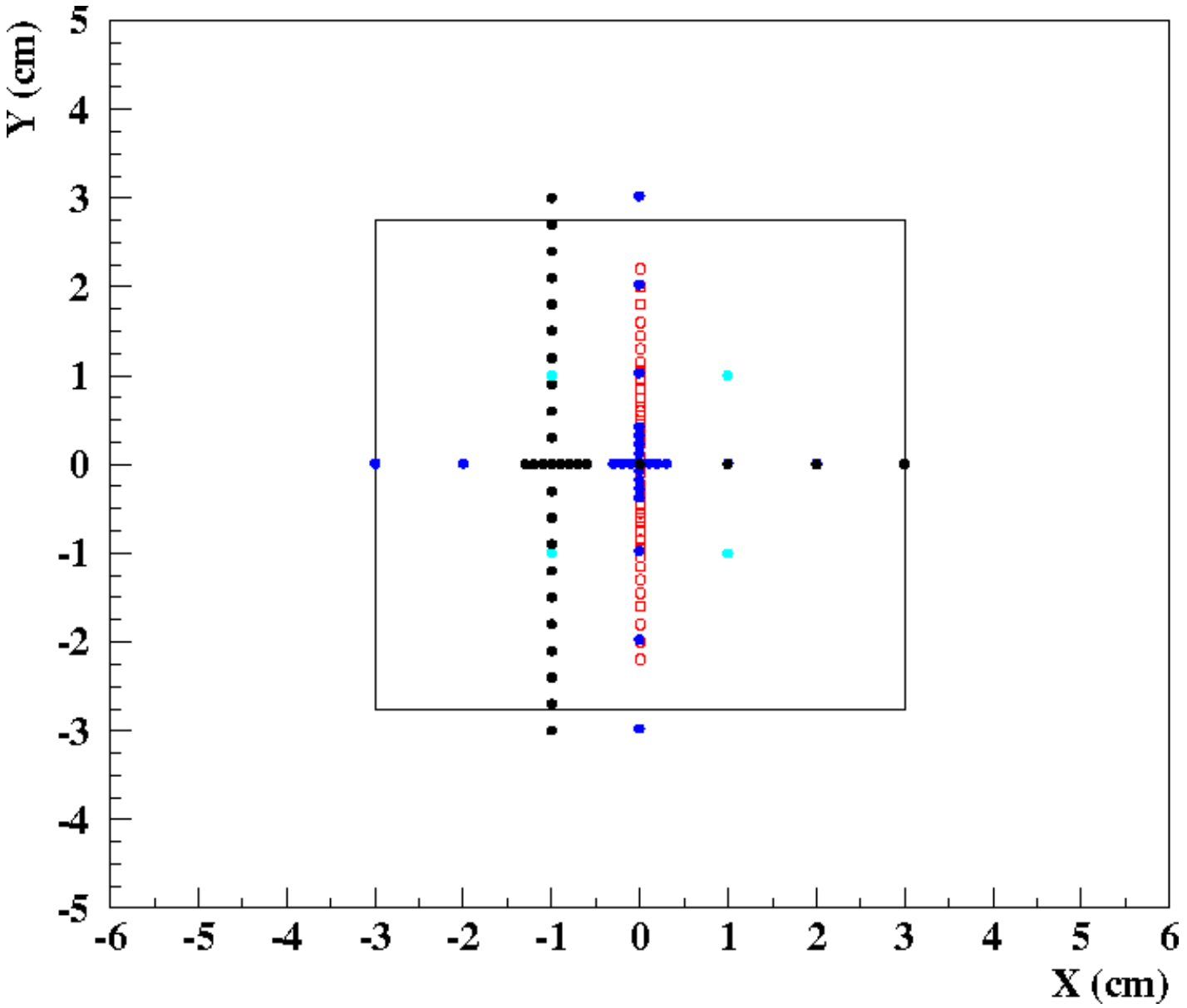
POL2000 Meeting, 30/08/2007

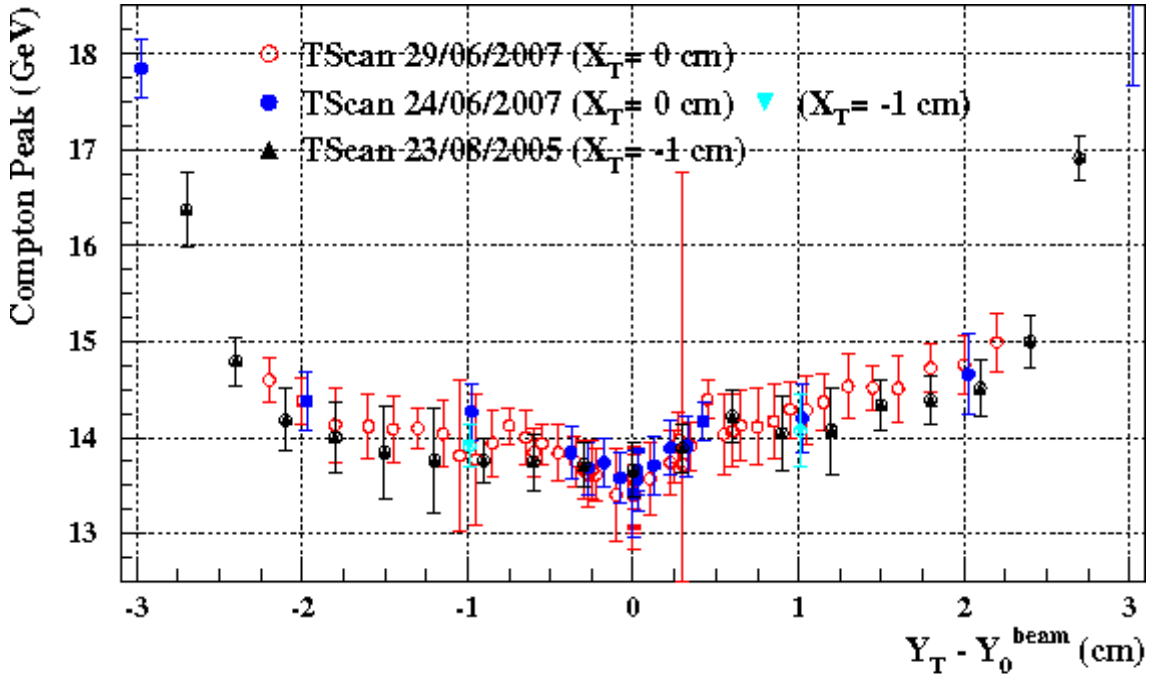
# Table Scan Data

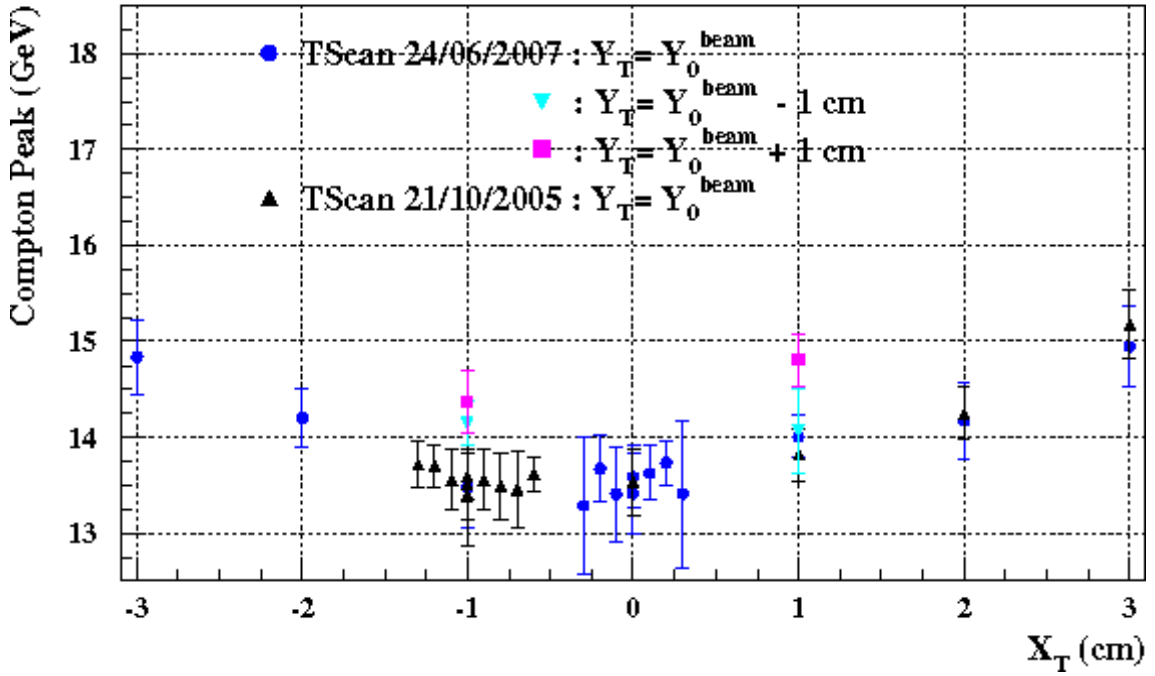



Black – 2005 data

Rest – 2007 data

# Position dependent Energy reconstruction

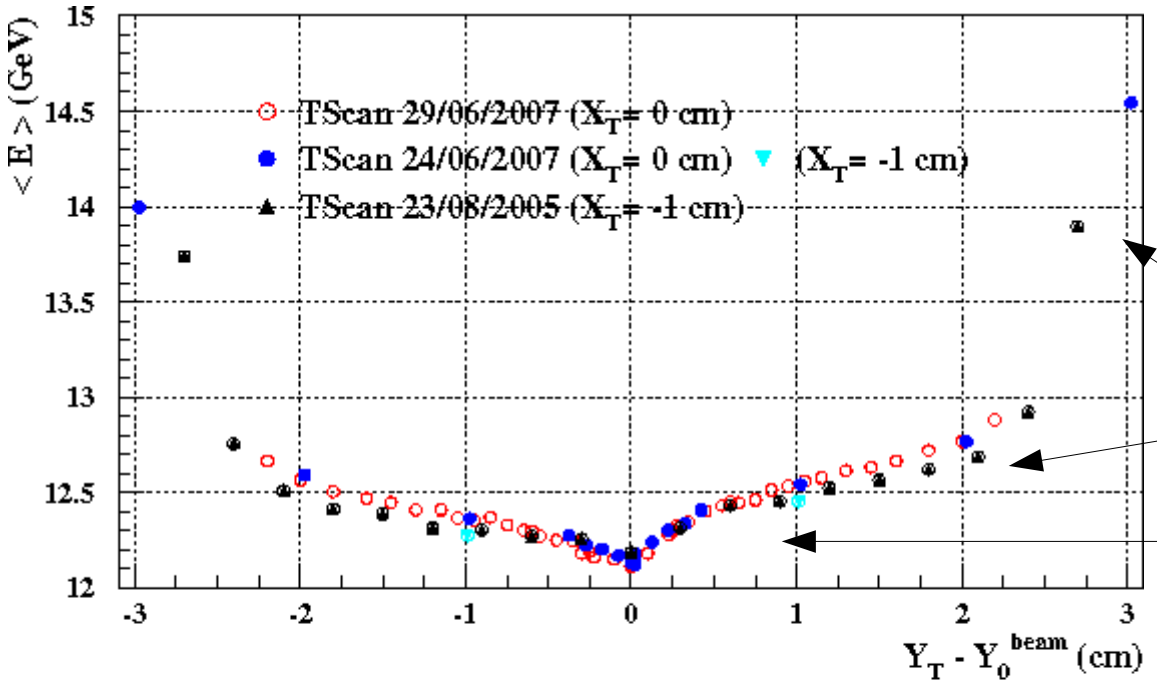



Compton Peak vs position

50-100 kevt, rather poor precision

# Position dependent Energy reconstruction

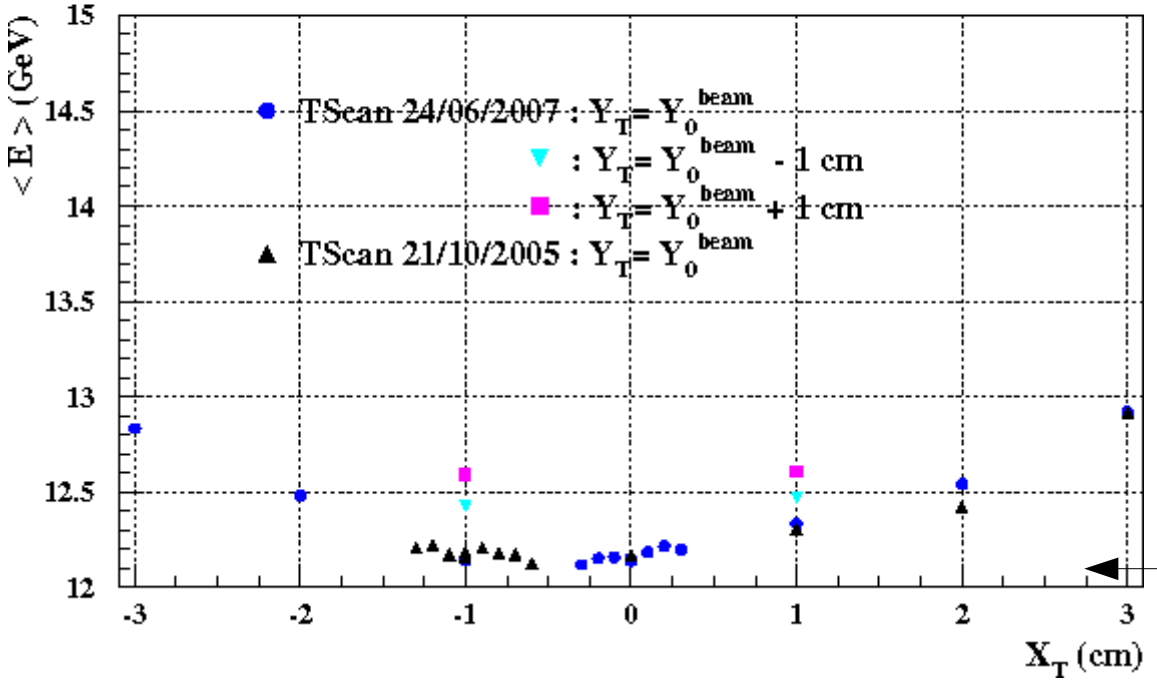



Mean energy in the range 10-30 GeV

Higher sampling fraction for Pb

Linear rise

Gap between up/down scintilator plates

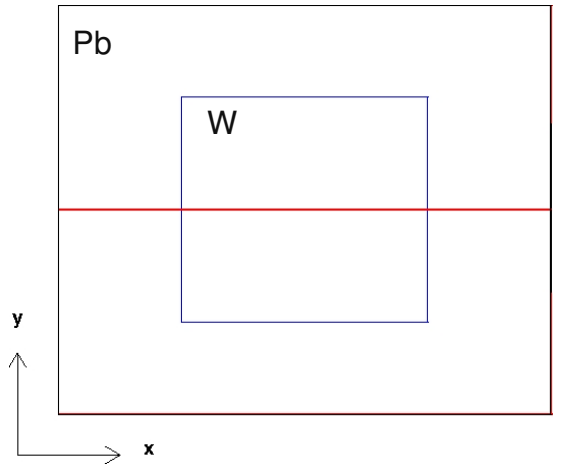


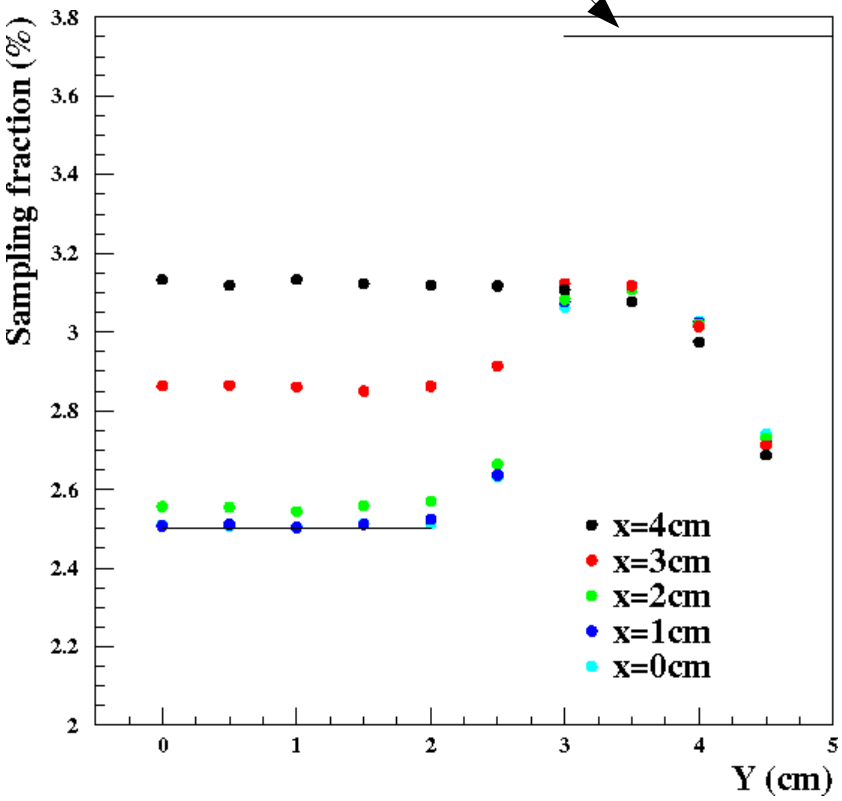

Minimum at ~-0.5cm
(PMT's HV ?)

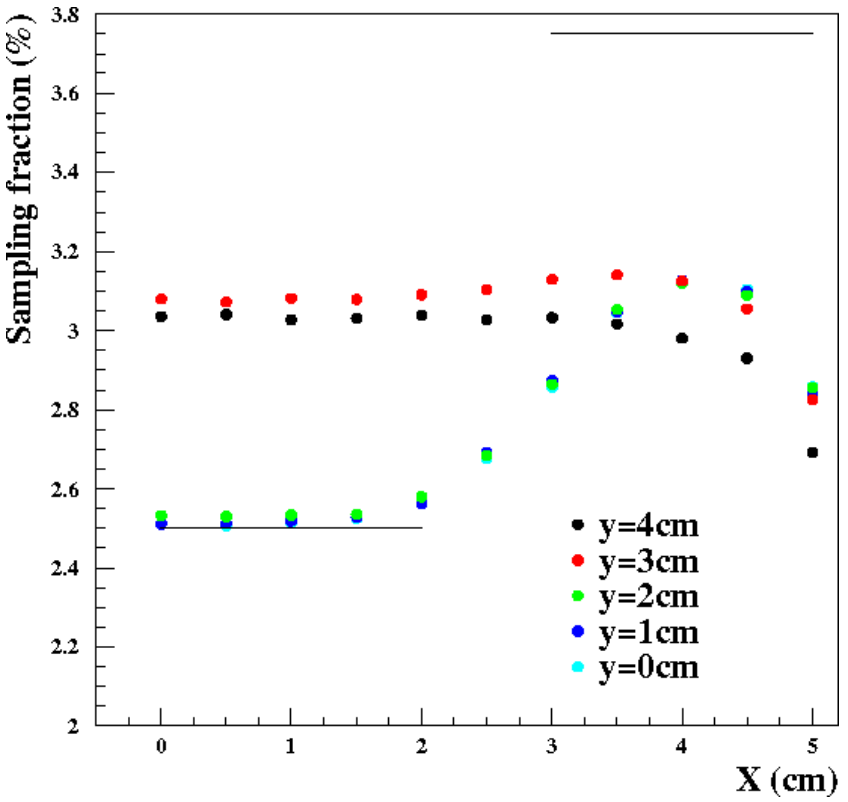
# TPOL MC

Sampling fraction vs position

W: 2.5%
Pb: W×1.5 = 3.75%
(1993 NIM paper)

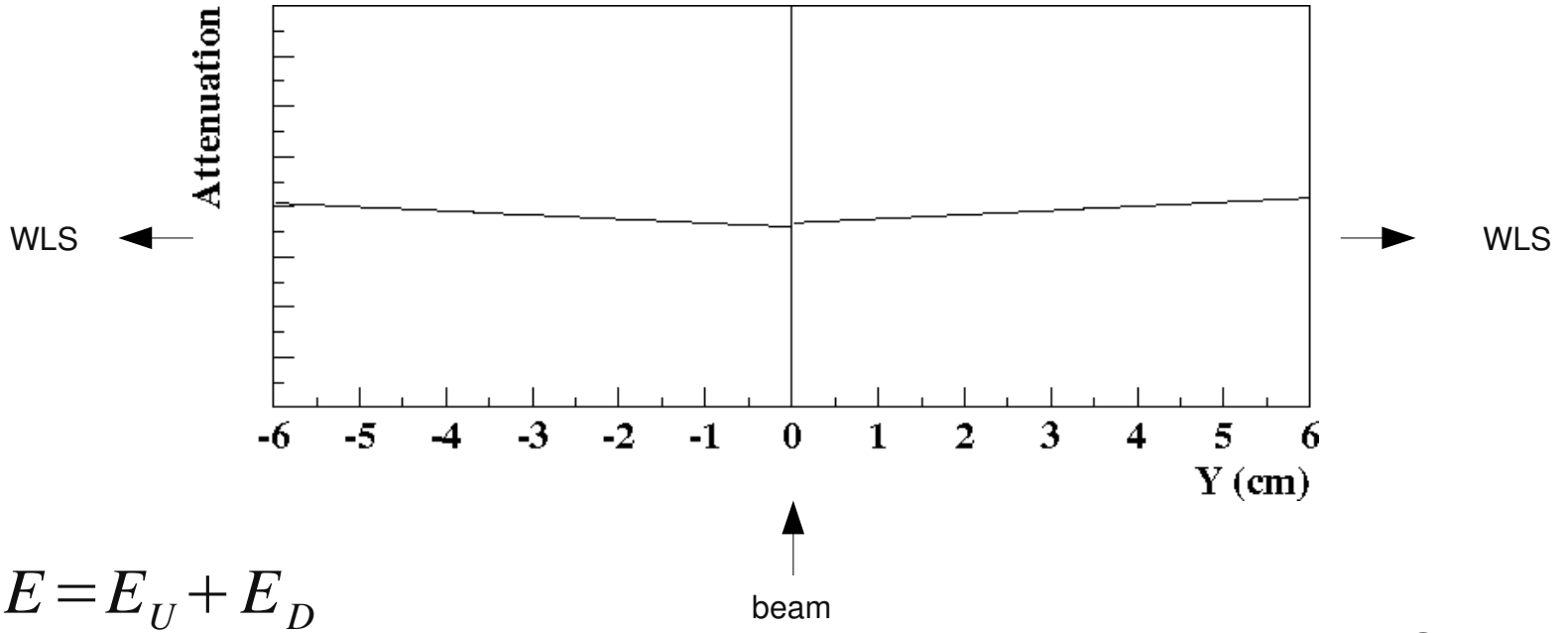


# MC tunning – digitisation model

Linear attenuation of light along y.




$$E = E_U + E_D$$

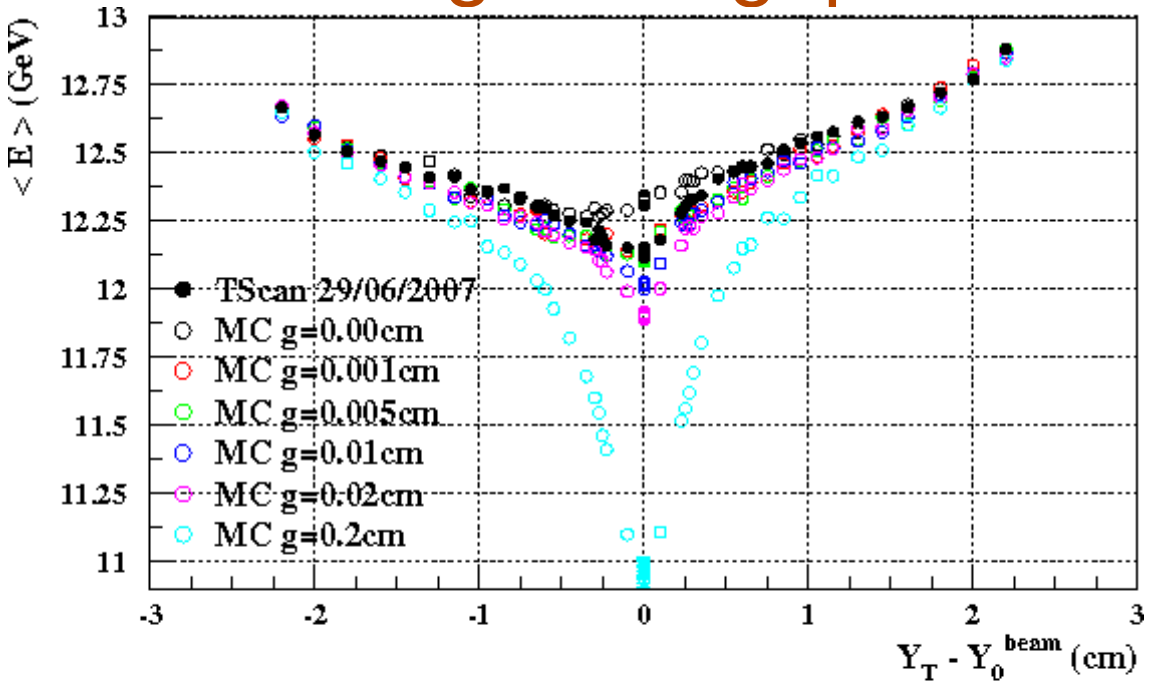
i – sum over GEANT hits

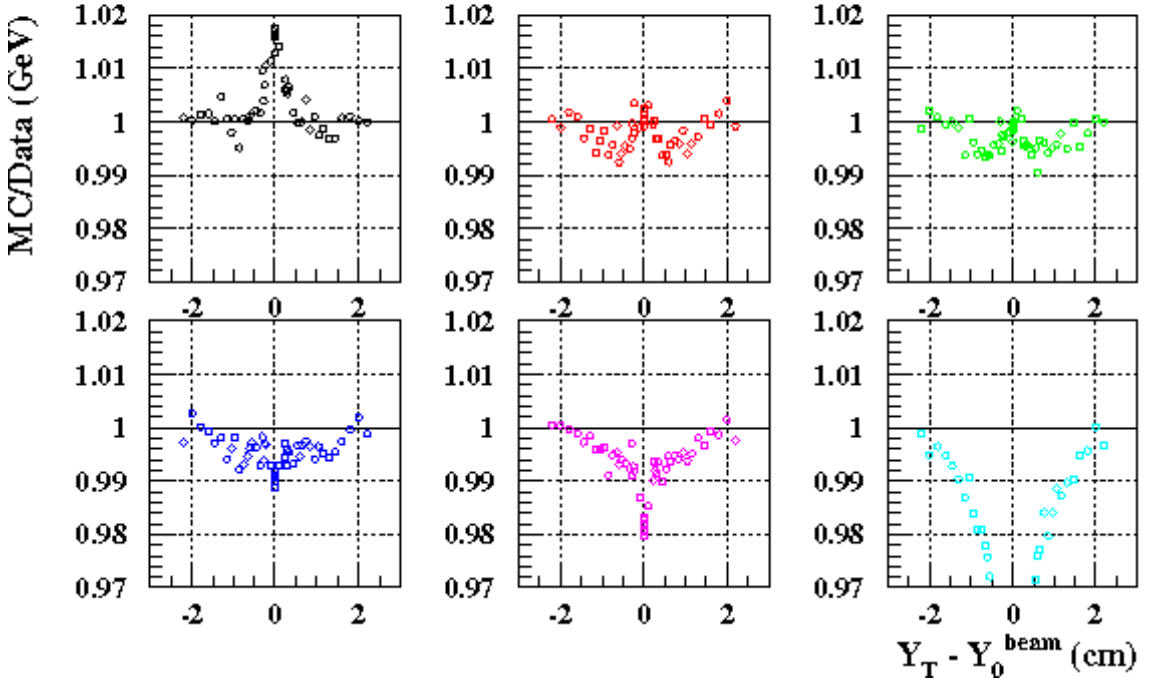
$$E_U = c\, N_\gamma \sum_i E_i \cdot (b_U - a_U y)$$

$$E_D = c\, N_\gamma \sum_i E_i \cdot (b_D - a_D y)$$

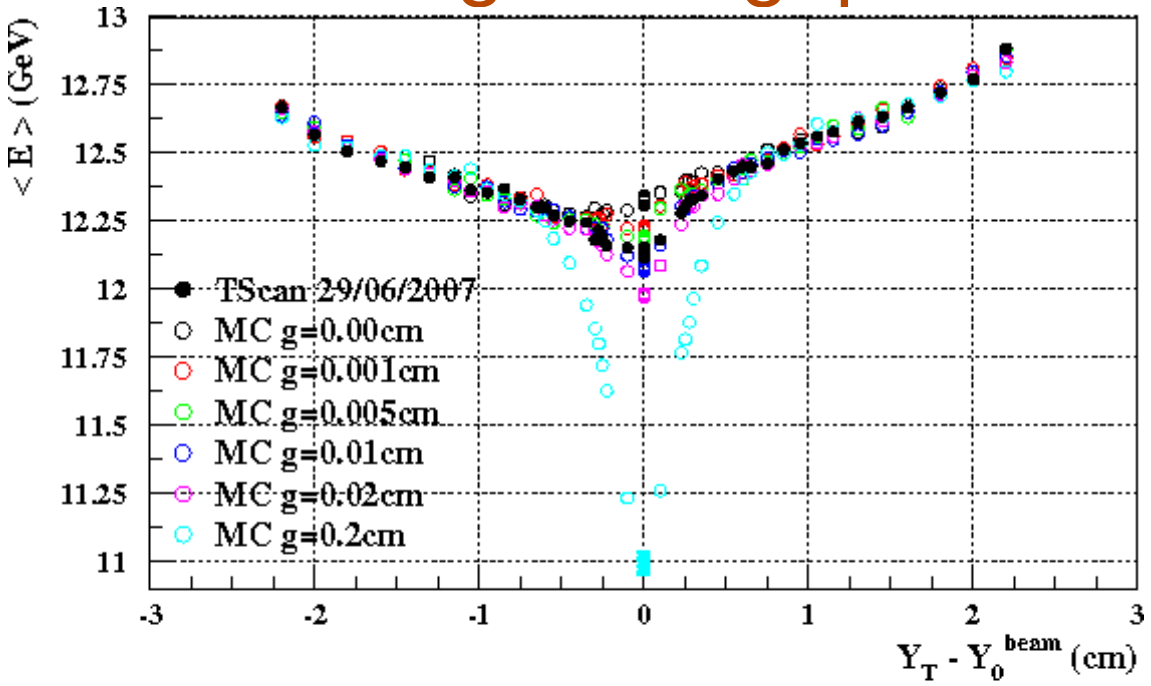
"gain" photo-statistics attenuation

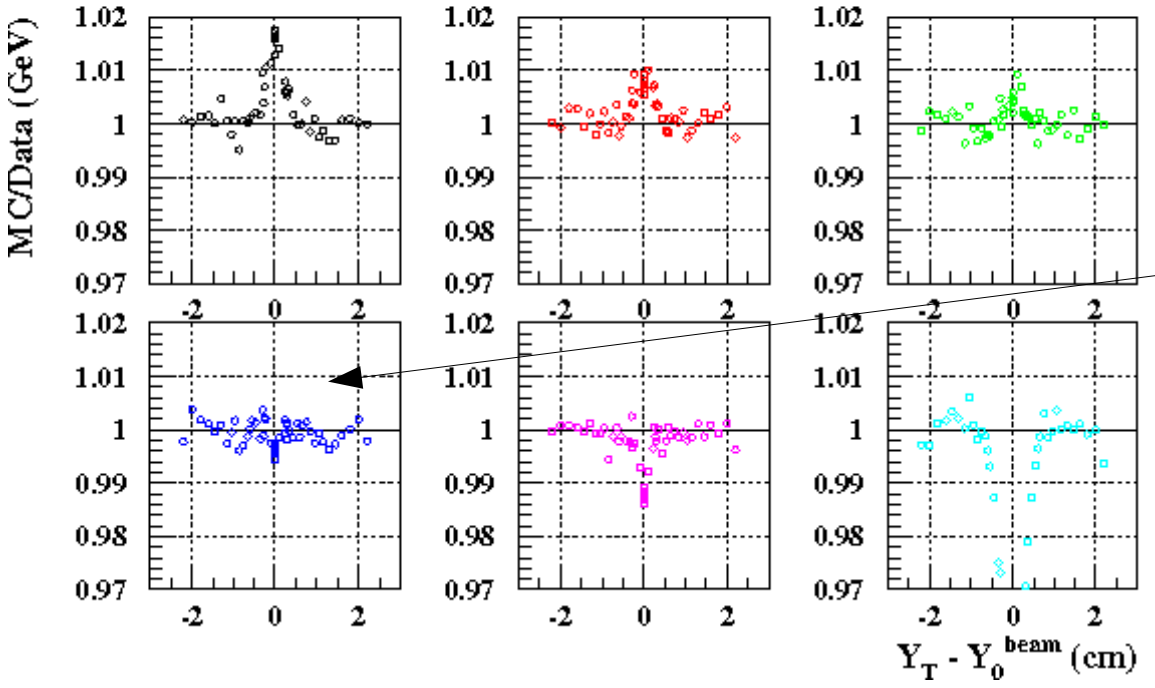
# MC tunning – the gap between up/down scin.



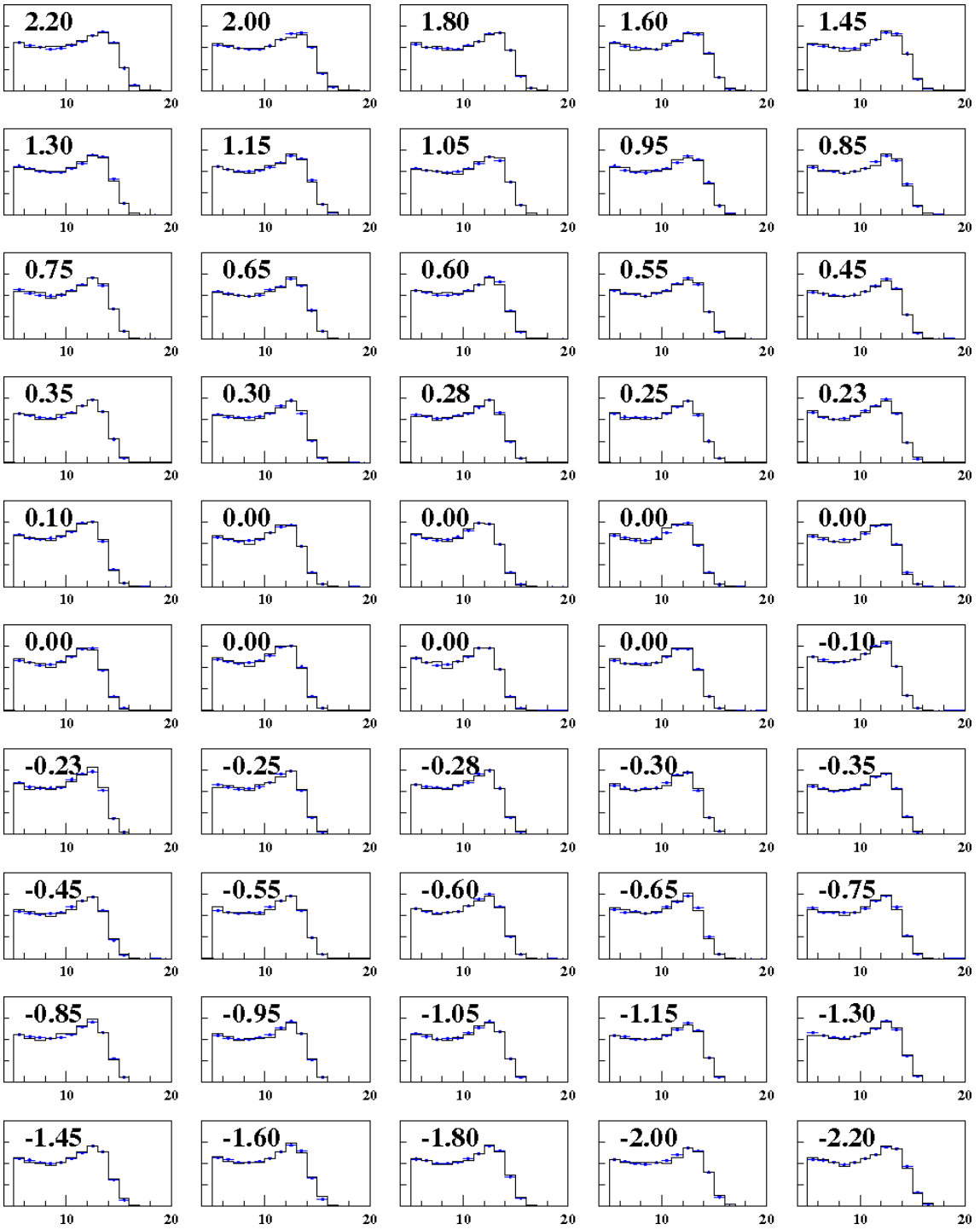
# MC tunning – the gap between up/down scin.



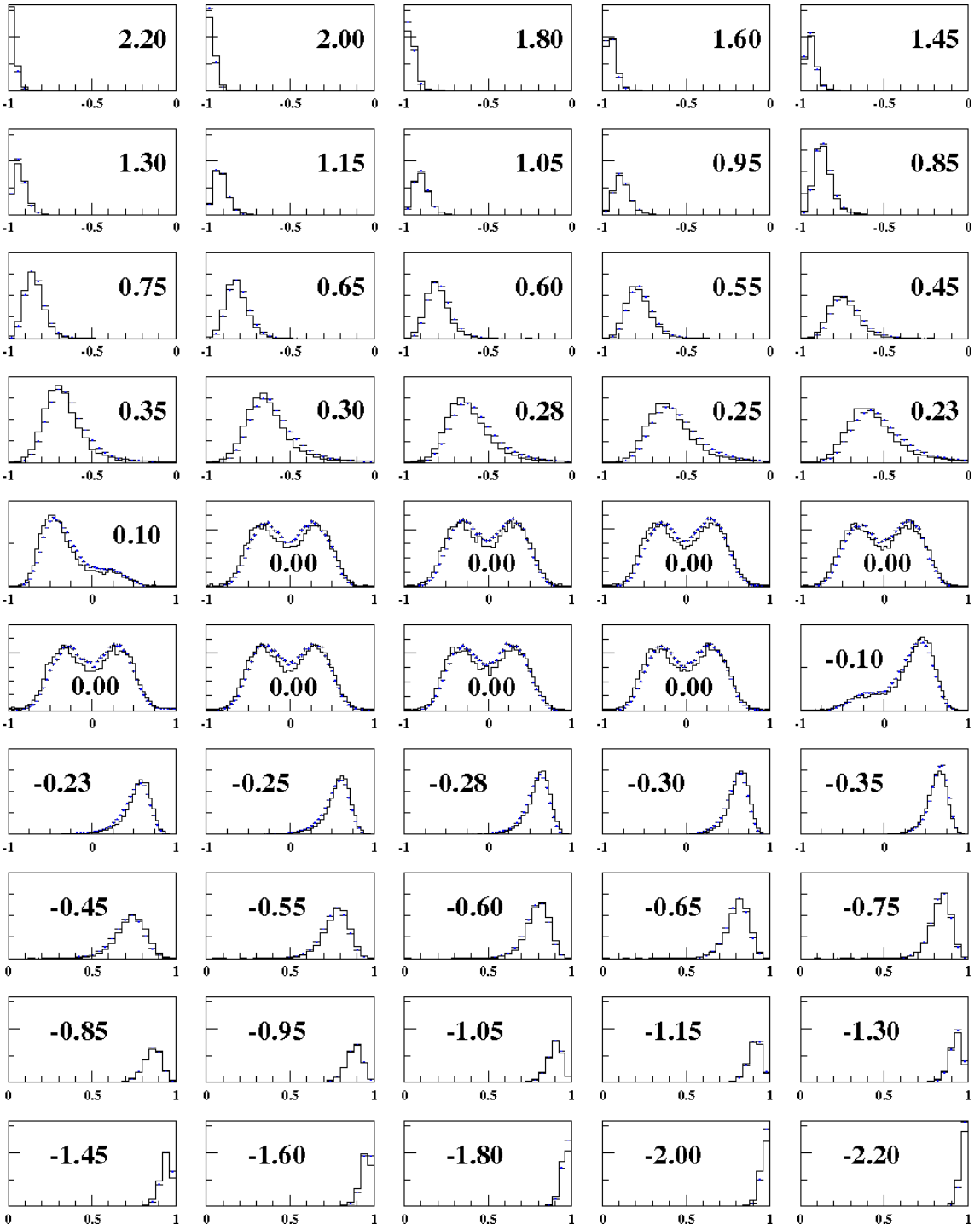




0.005 cm < Gap <= 0.01cm

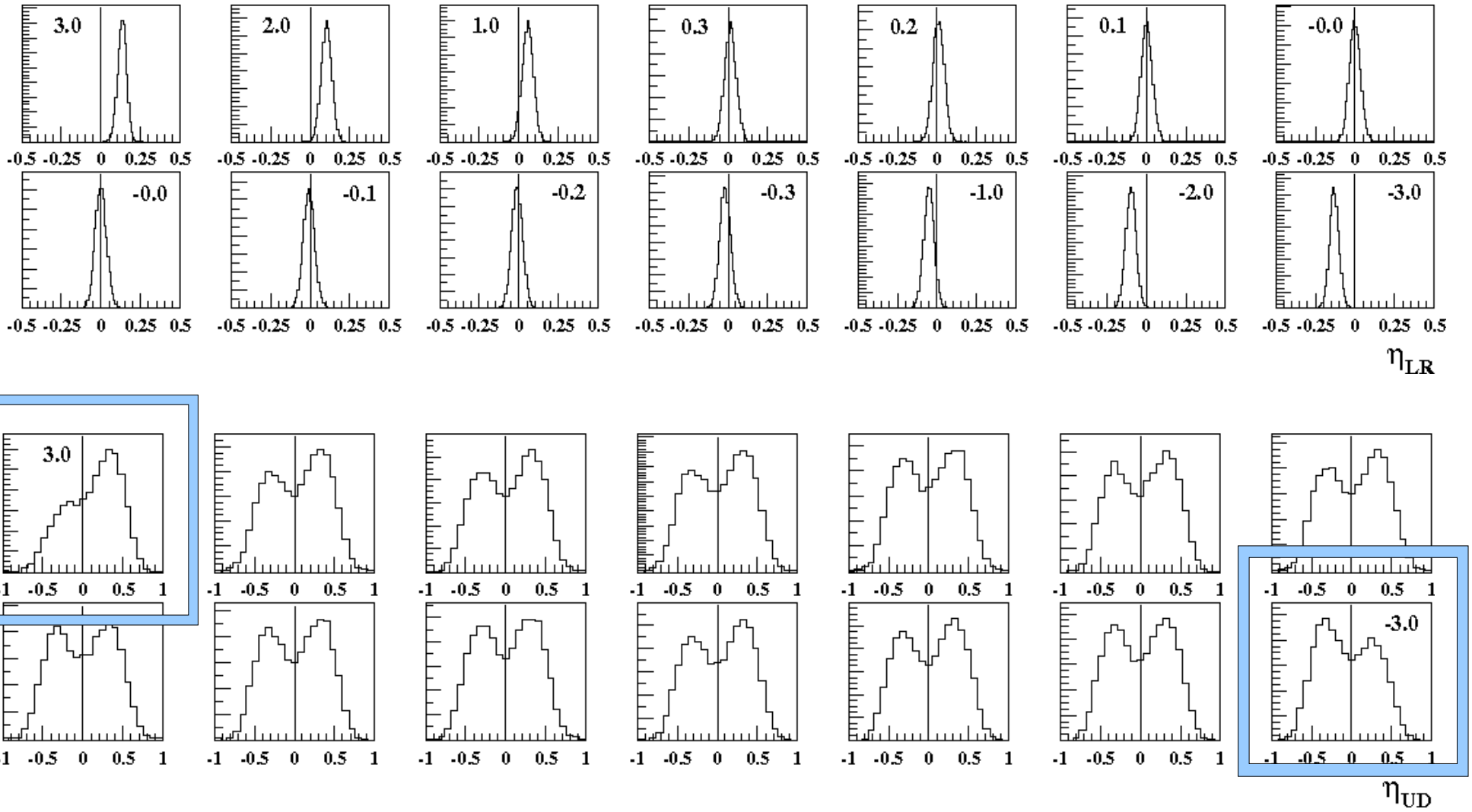
# Energy in bins of y



# Eta
# in bins of y



# Etas in bins of x (horizontal scan @ y=0)




CAL rotated wrt. the beam?

# Outlook

- Choose the final value for the gap between scin. (up/down)
- Check/correct the sampling fraction for Pb
- Validate the digitisation model in horizontal plane (along X)
- Study the position of CAL wrt. the beam (rotation in XY plane?)