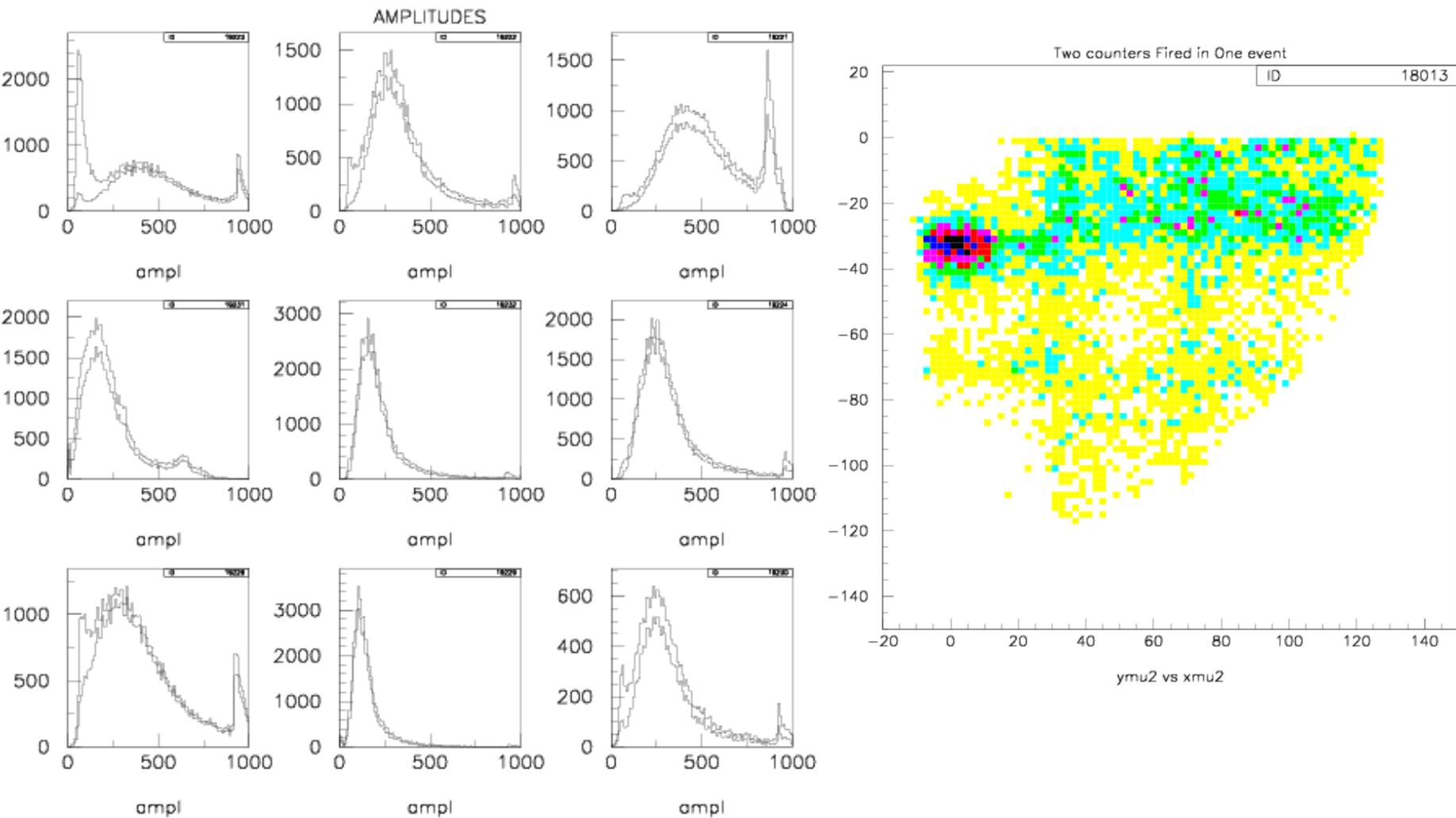# FAST MU-VETO AND HAC COUNTERS TESTS

## First attempt of time resolution estimation

IHEP/INR team

23 October 2008

- Statistics studied corresponds to ~ 10 min of data-taking

- Difference between Hodoscope time and HAC/MUV times is studied.

- Detailed studies of position dependence with full statistics in progress…

Amplitudes in counters.
Top curves – all hits
Bottom – only this counter was hit.
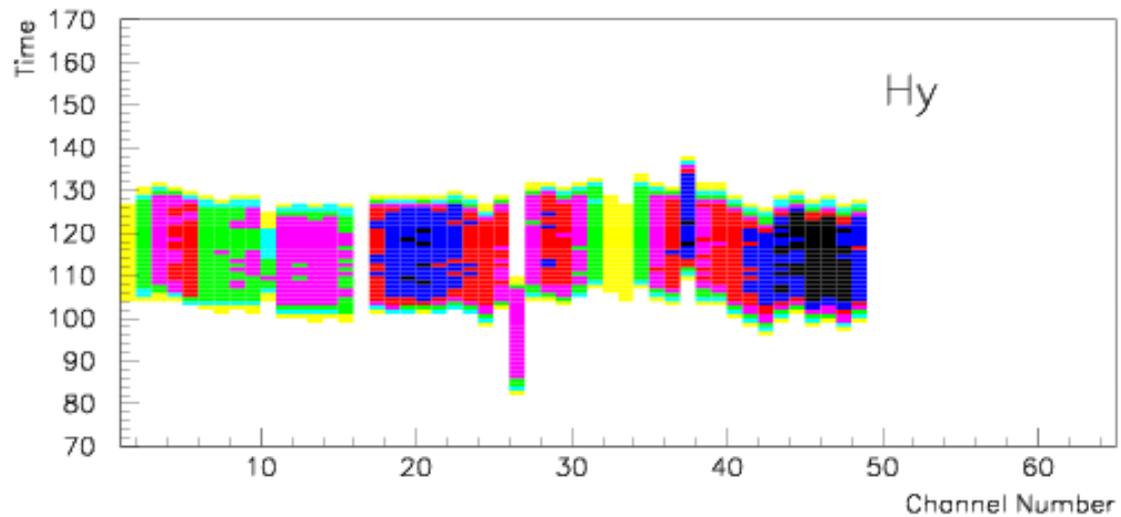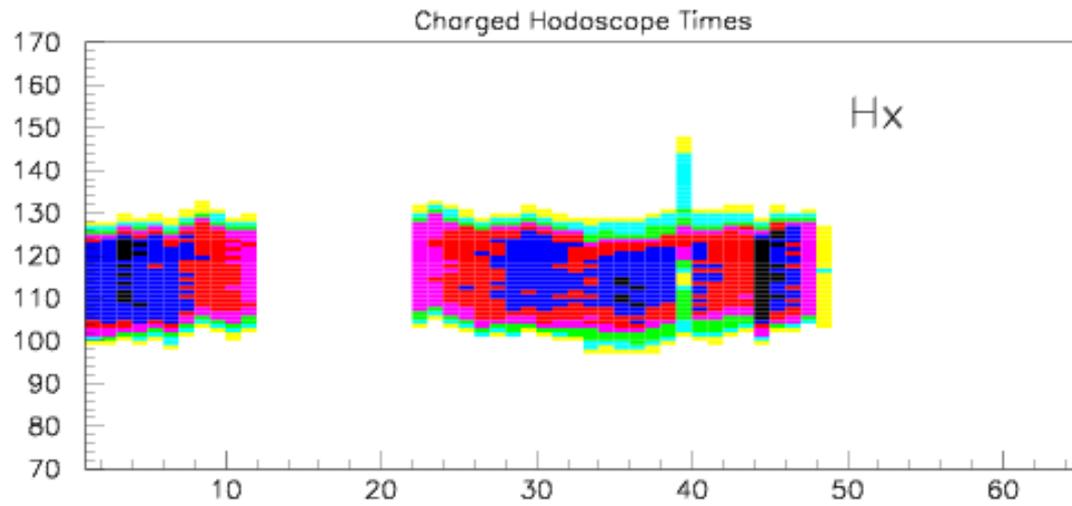
Obvious crass-talk in counter 1
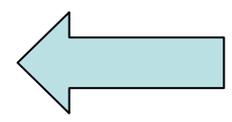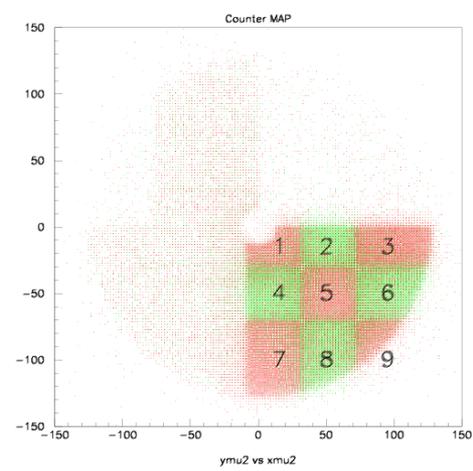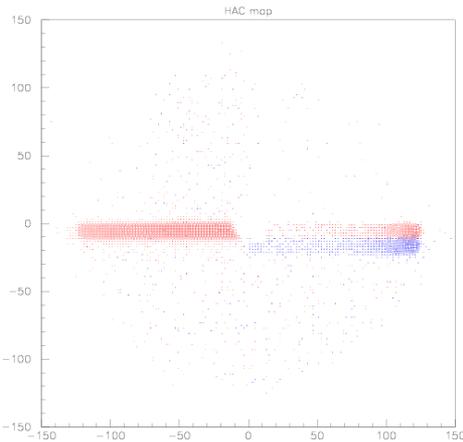
HAC strips and MUV positions

1. Two strips disappeared with requirement
   Nx = Ny = 1
2. Time difference for the above condition
   looks good.
3. More holes appear with tight requirement
   on time difference.
4. Cross-talk between these two strips?
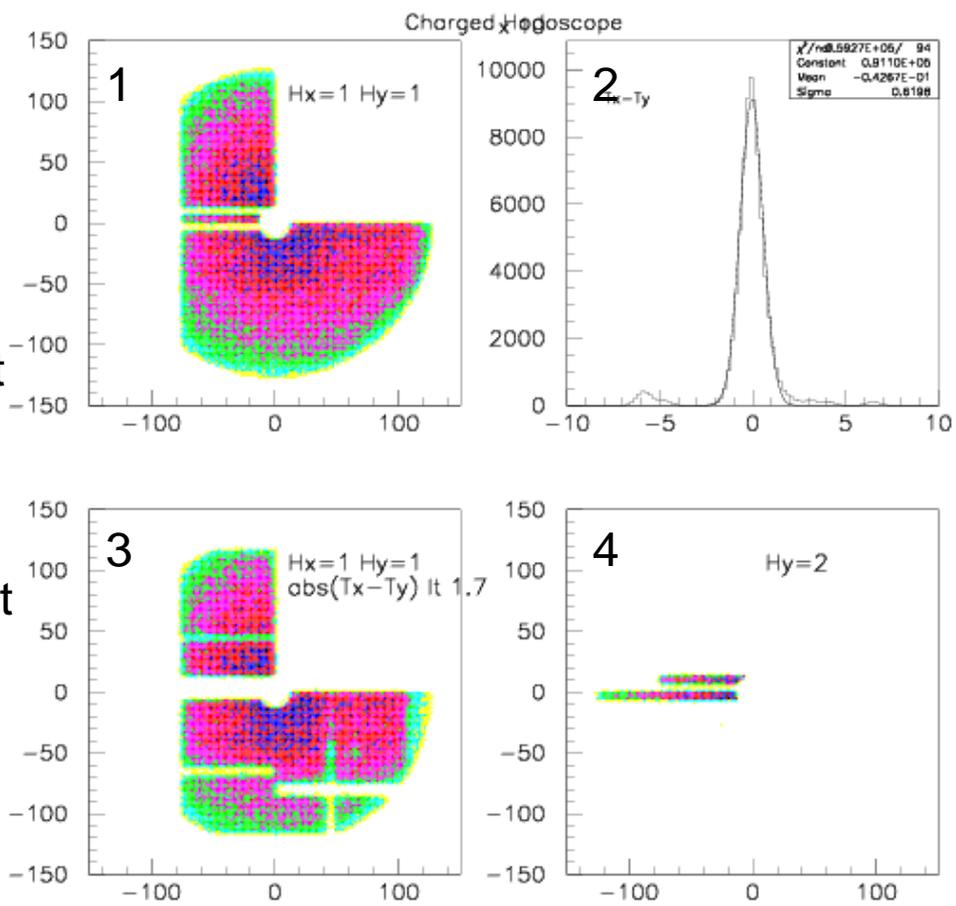
These features should be taken into account when estimating
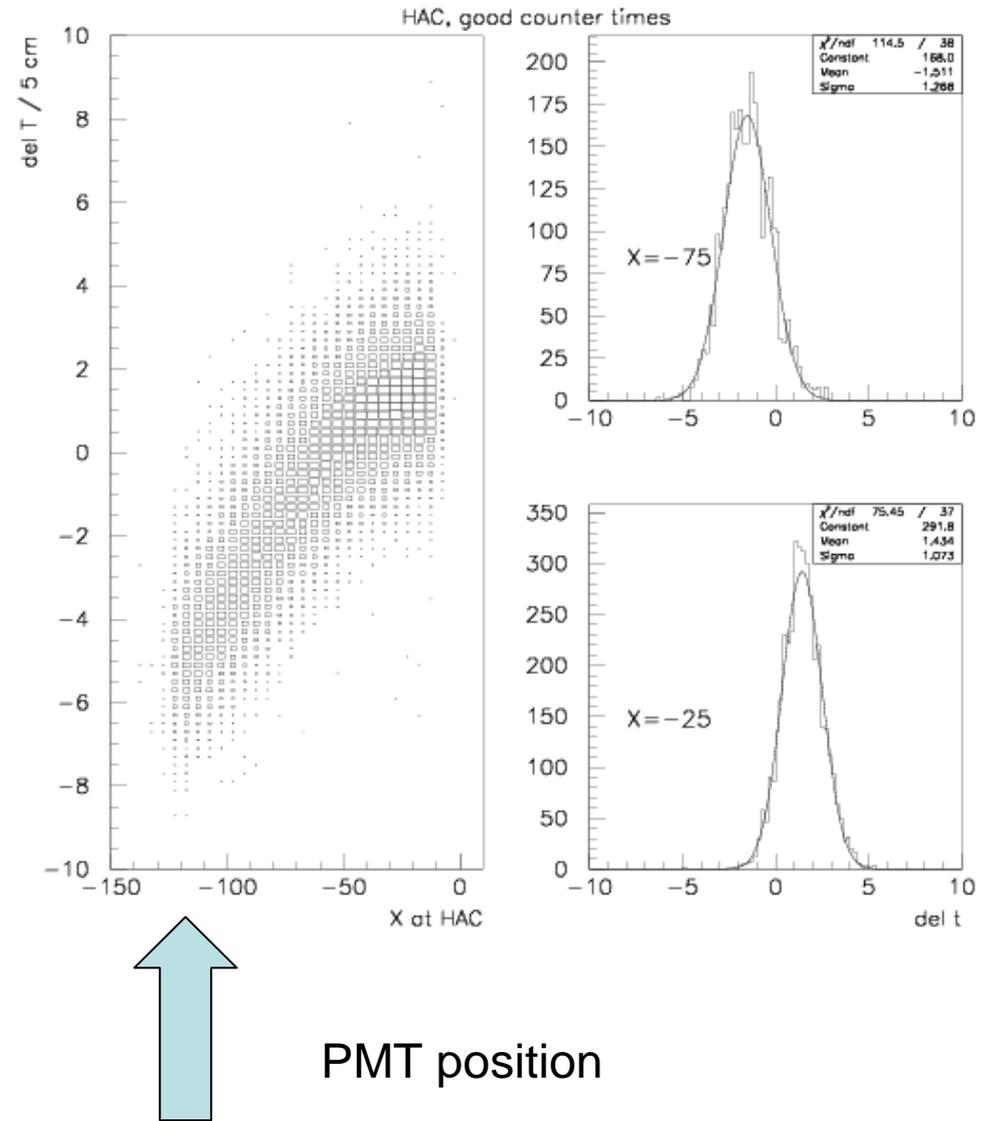time resolution for new counters.

Time distribution vs. channel in charged hodoscope

Time distribution in 5cm regions.

Some dependence on track position
(Due to larger light path difference
between central and peripheral points
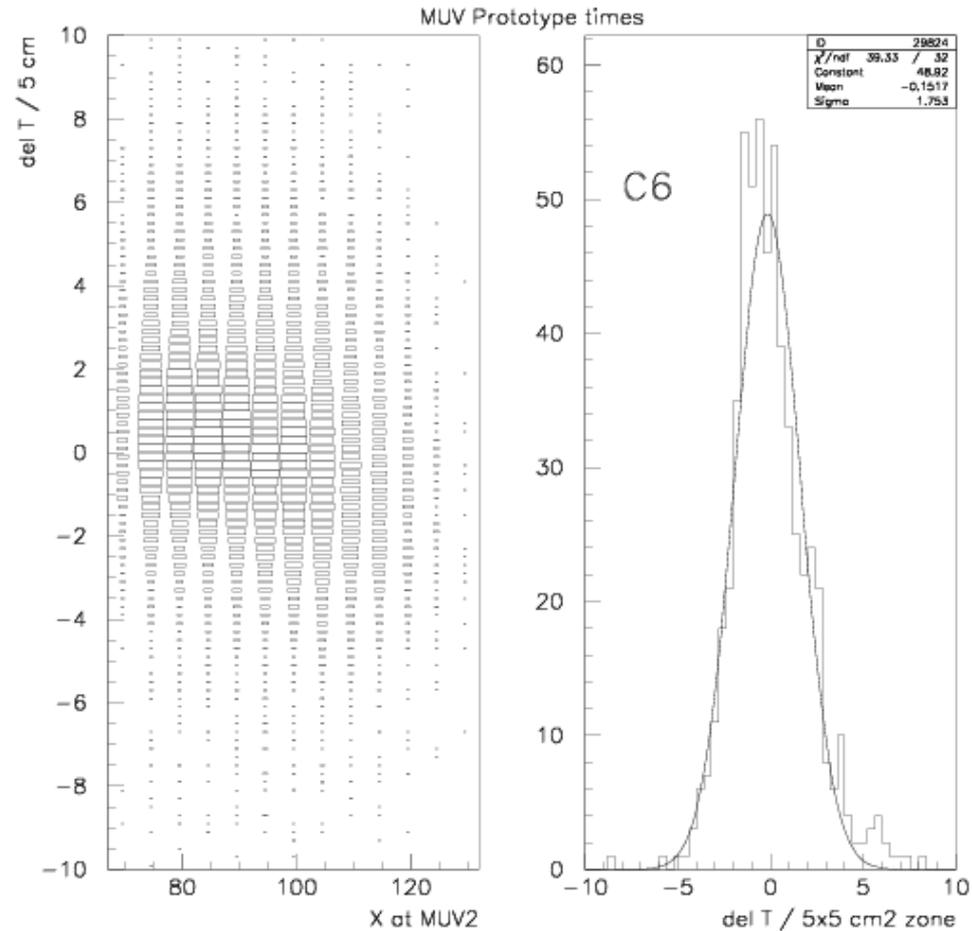when track is close to PMTs?)

Time properties look good.

PMT position

Time resolution for particular MUV counter

Regions of 5x5 cm are considered in middle Y position

No significant dependence on X position

Typical delta T resolution of ~1.7 ns (last year ~2.8 ns)

Resolution of Hodoscope should be taken into account

PMT position

Conclusions

- "New" HAC counters show good time performance.

- MUV counters show time resolution of ~1.7 ns (convoluted with Hodoscope resolution)
- No significant position dependence observed in MUV counters

- Detailed studies in progress.

- Cross-talks reasons will be studied and eliminated