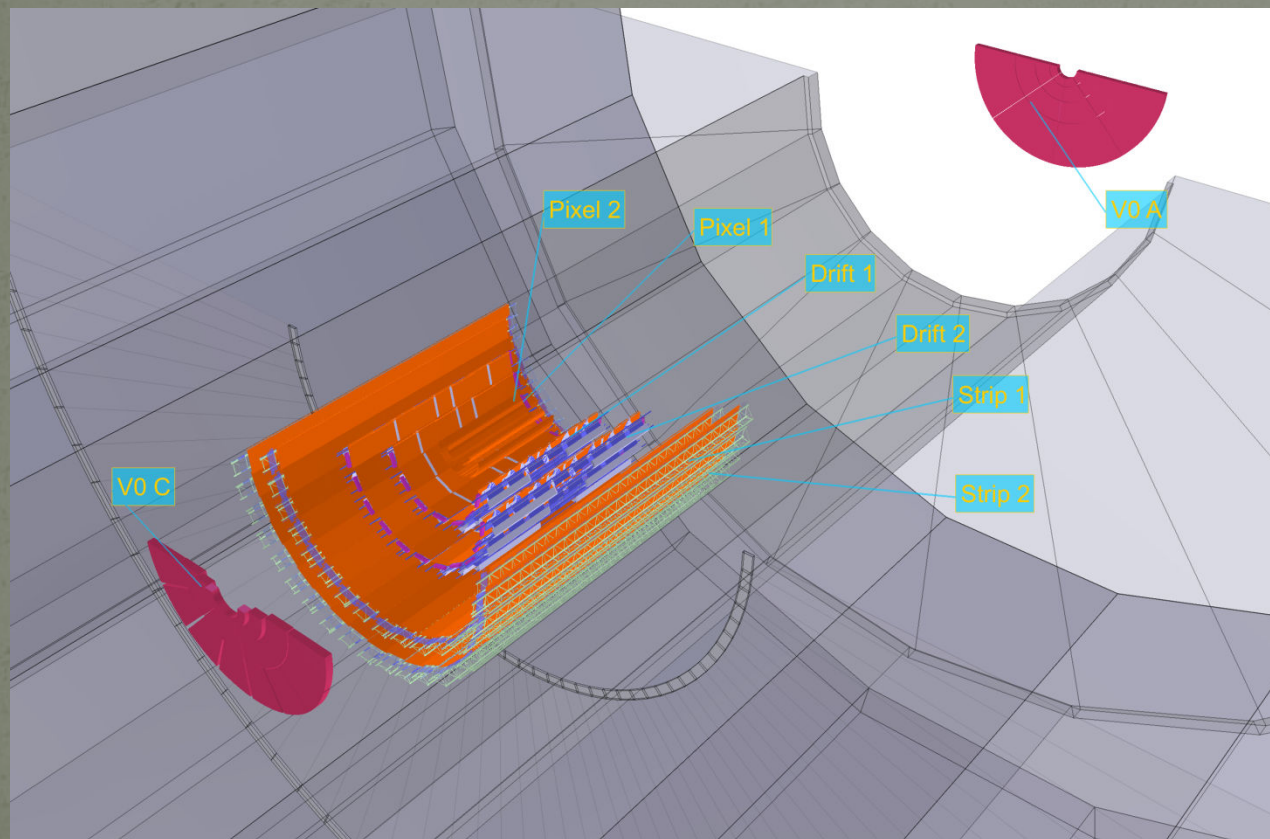# First Collisions in ALICE

Federico Antinori
(INFN Padova, Italy)
on behalf of the ALICE Collaboration

1st LHC report, 26 November 2009

Detector configuration

- ALICE configuration for First Collisions on Monday 23/11:

On:

"splash-resistant" detectors:

- 6 layers of Inner Tracking System
- V0 scintillators

  (+ calorimetry: Zero Degree Calo Photon Spectrometer EM Calorimeter)
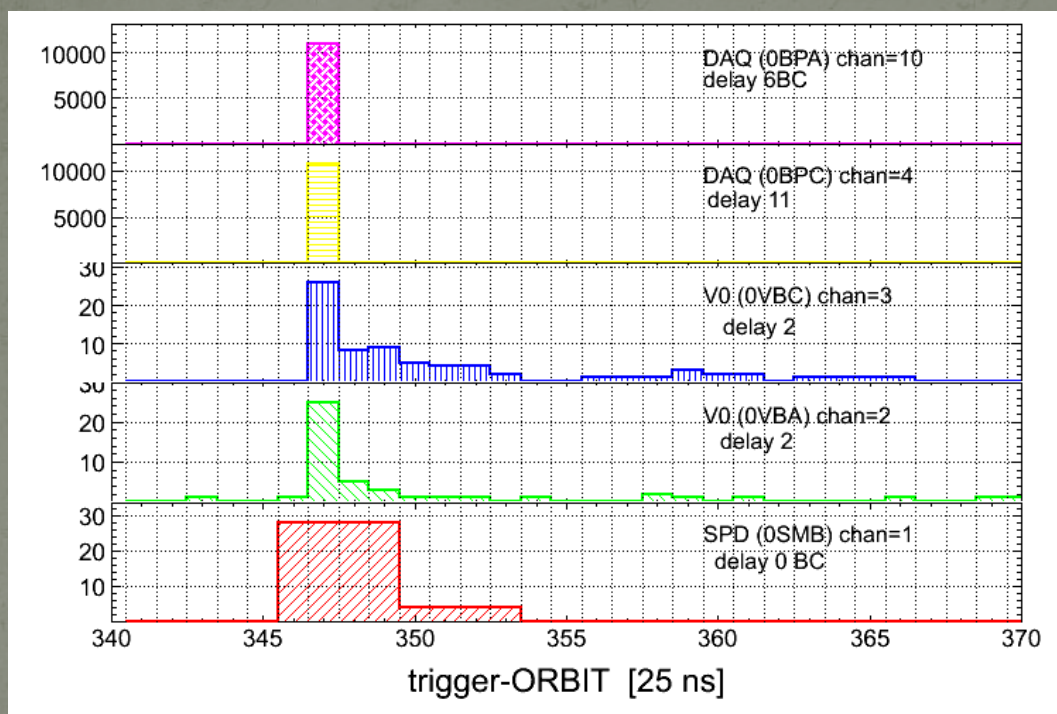
Off:

everything else

- Trigger: Fast-Or from 2 inner layers (Silicon Pixels) in coincidence with bunches

The "ALICE fill" (ca 16:35)

- Sequence of events:
  - beam 1 injected, captured, circulating
  - data taking started
  - at 16:38 beam 2 injected on "P2" bucket, captured, circulating
  - as soon as beam 2 injected, the ALICE trigger rate jumps from a few 10^{-3} s^{-1} (with beam 1 bunch only) to ~ 10^{-1} s^{-1}
    - → no further adjustment needed
  - within seconds, the first event popped up on the display
  - at 17:21 the beams were dumped and the run closed with 284 events
    - for an estimated integrated luminosity of about 8 mb^{-1} ☺

Alignment of trigger signals

- trigger signals pre-aligned with TED dumps, injections, circulating beams
- measured alignment during "ALICE fill":

The First Event!

A high multiplicity event...
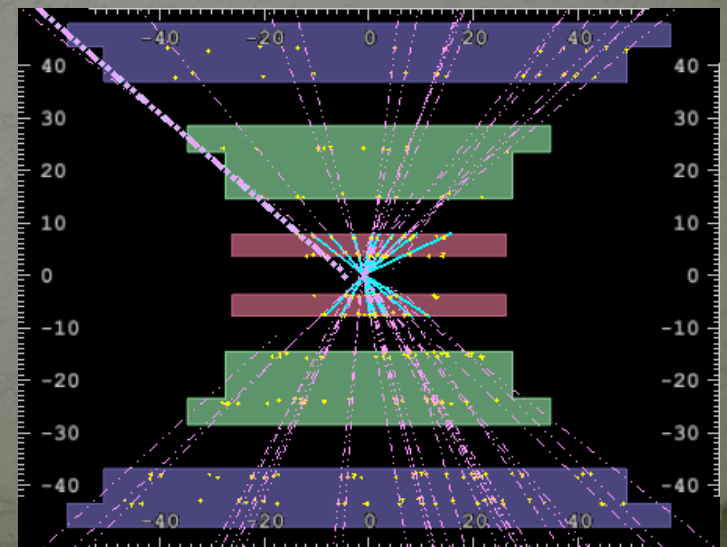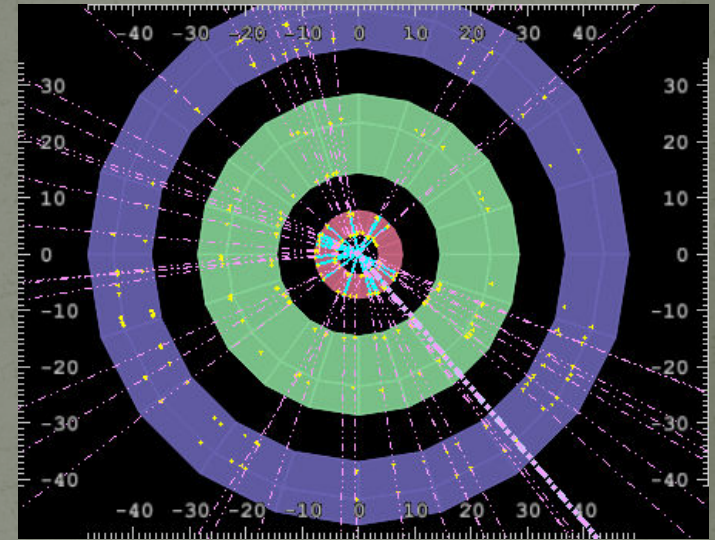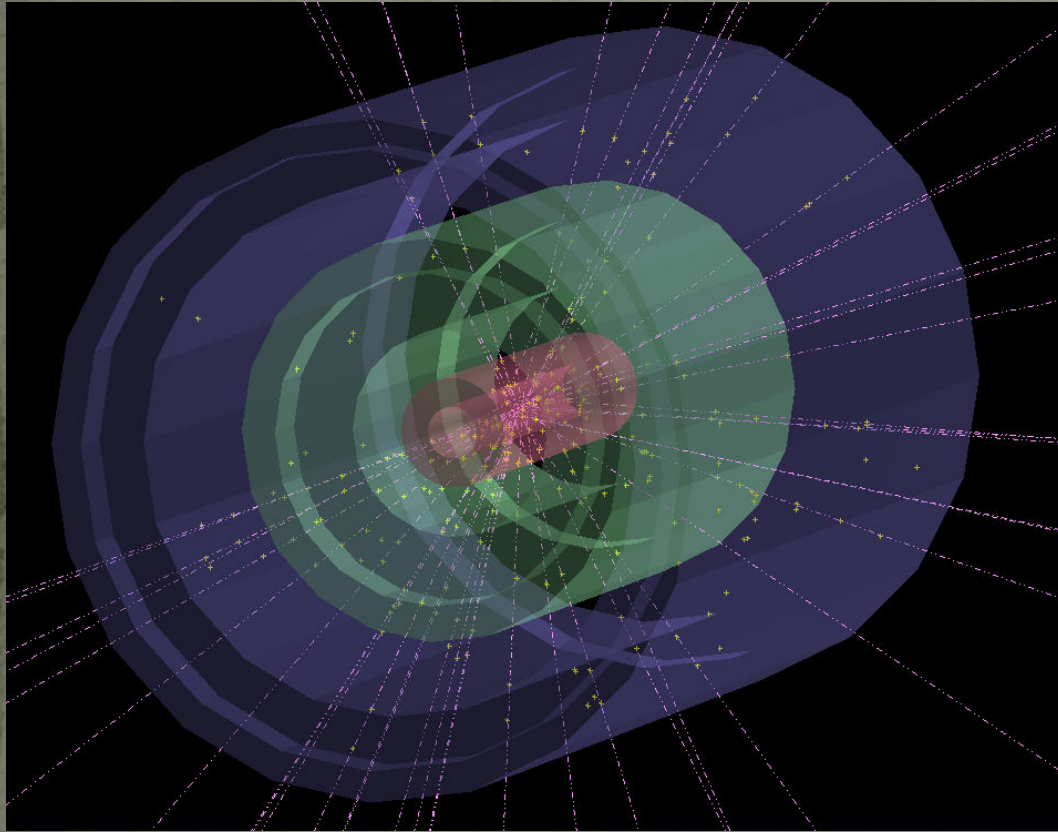
Timing in V0 scintillators

V0-A side

from interaction region

from beam line

V0-C side

from interaction region

from beam line
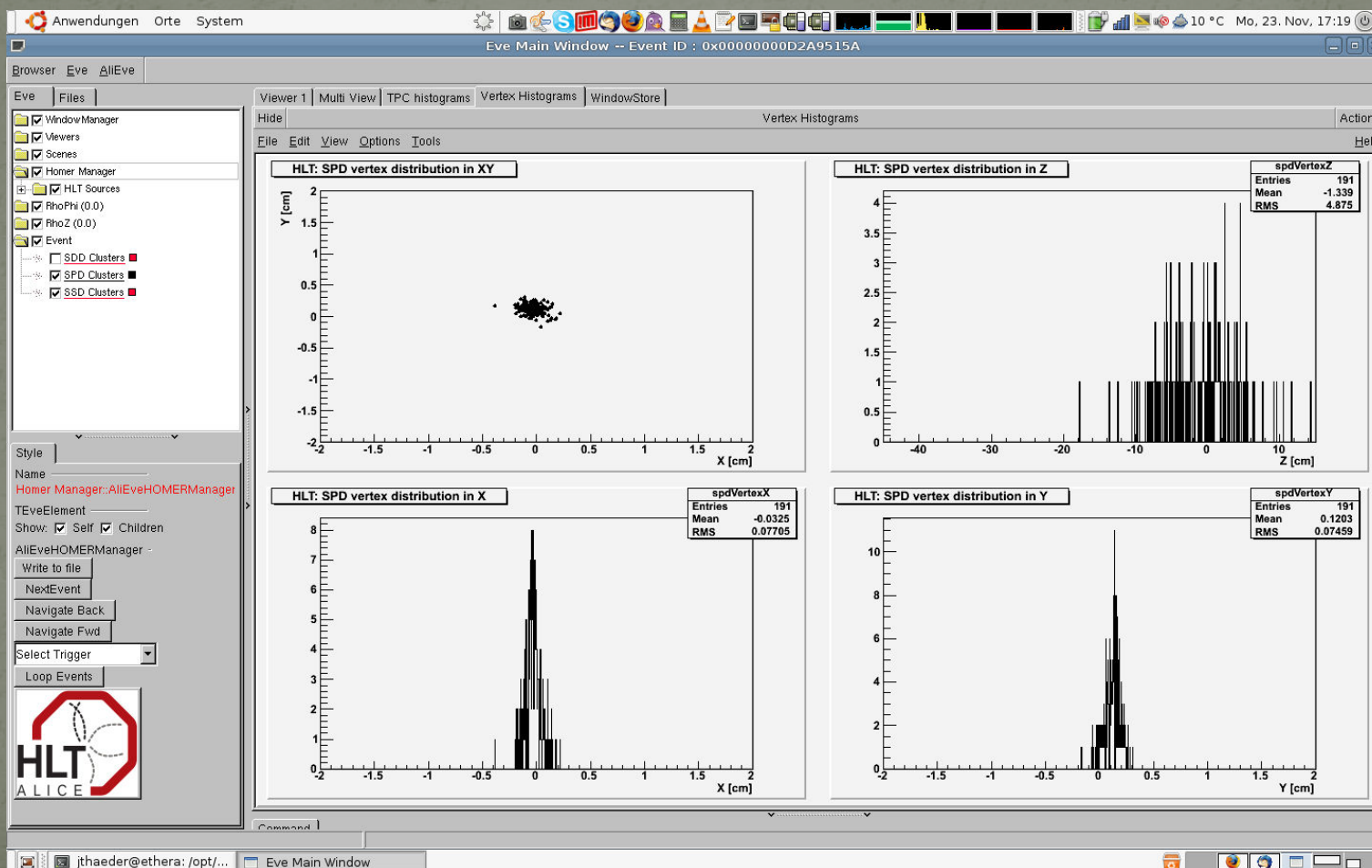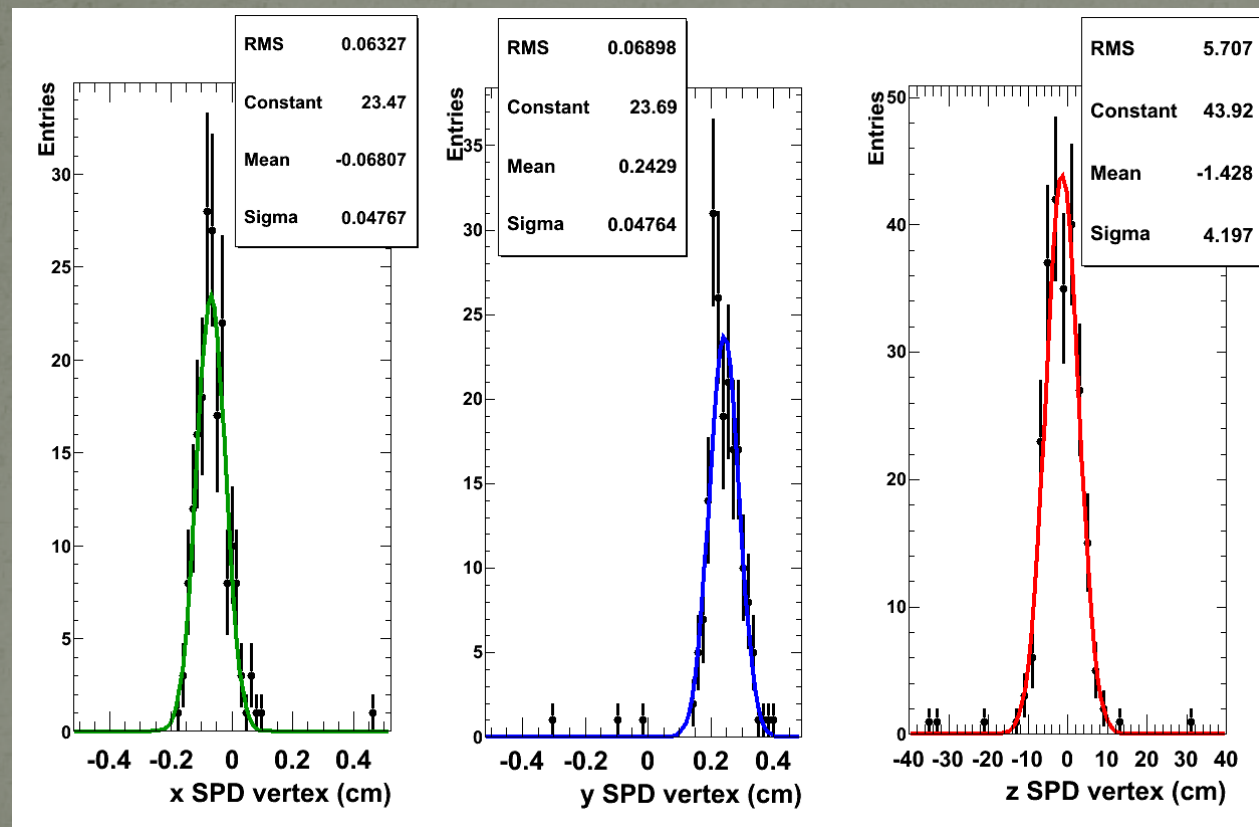
V0-A

V0-C
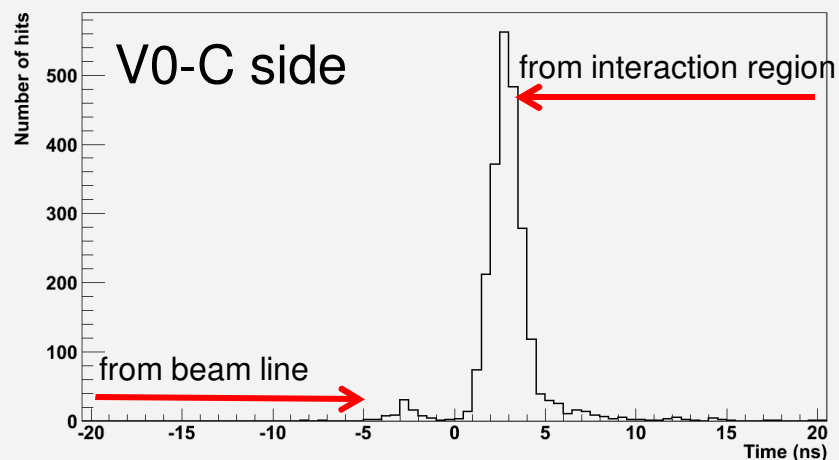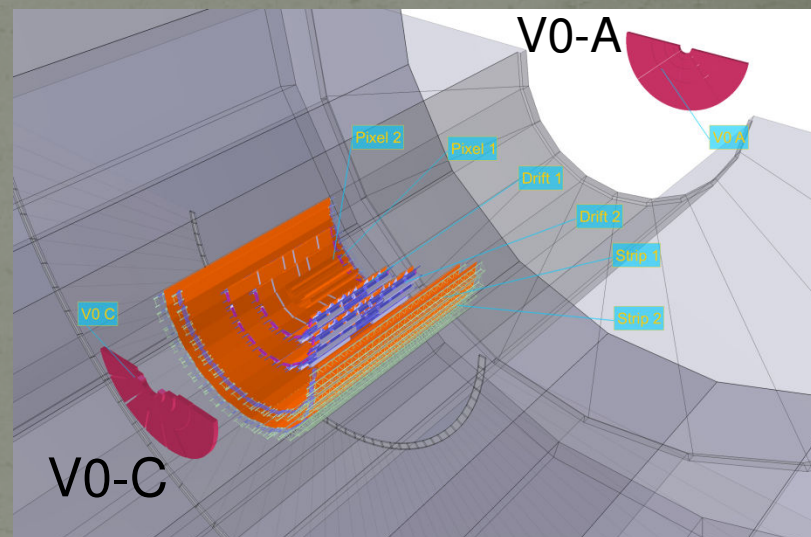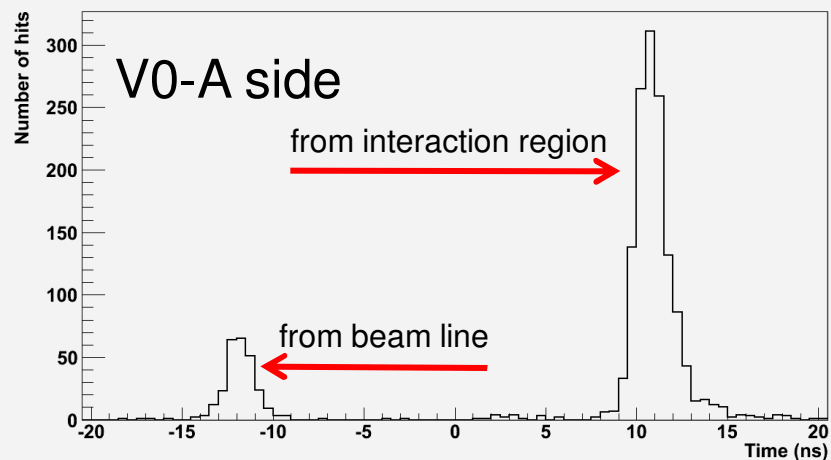
Vertex distribution (z), online

- Calculated by High Level Trigger from tracklets in Silicon Pixel Detector

Vertex distributions (offline)

- Calculated in Offline from tracklets in Silicon Pixel Detector:
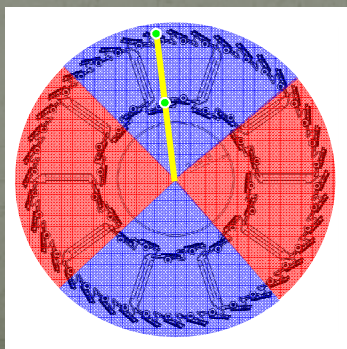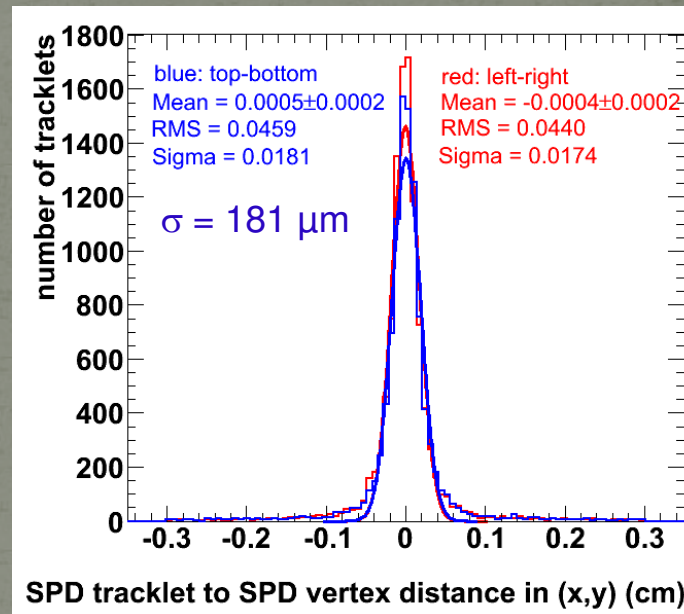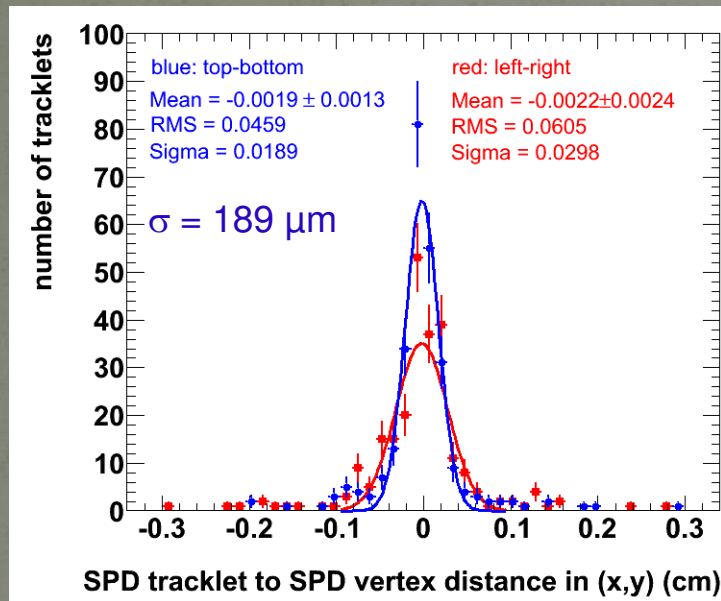

$\sigma_x \sim 475\ \mu m$ $\sigma_y \sim 475\ \mu m$ $\sigma_z \sim 4.2\ cm$

Tracklet impact parameters

real data

simulation

- alignment from cosmics:
→ better for top-bottom
  than for left-right
  quadrants

What next?

- as soon as "stable beam"
  - → bring up and time in whole detector
  - → start ALICE "minimum bias" pp program
    - QCD, heavy flavours, jets,…
    - reference data for Pb-Pb collisions
    - → collect data at intermediate steps on the way to high energy

- as soon as luminosity high enough
  - → start rare triggers program
    - high multiplicity trigger
    - muon, electron, photon triggers
    - …

Thanks and congratulations to the machine teams for the outstanding performance!

and now...

the ALICE Control Room on Monday afternoon

(comme si vous y étiez...)