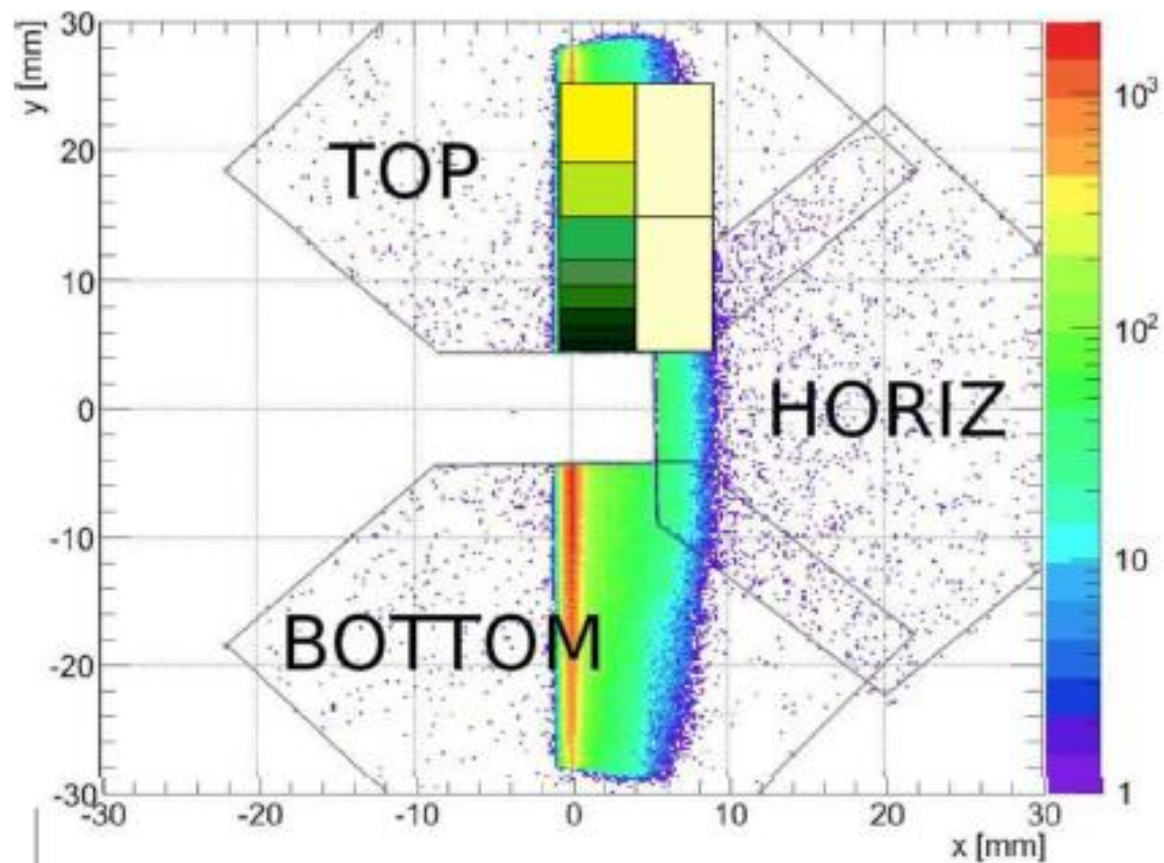


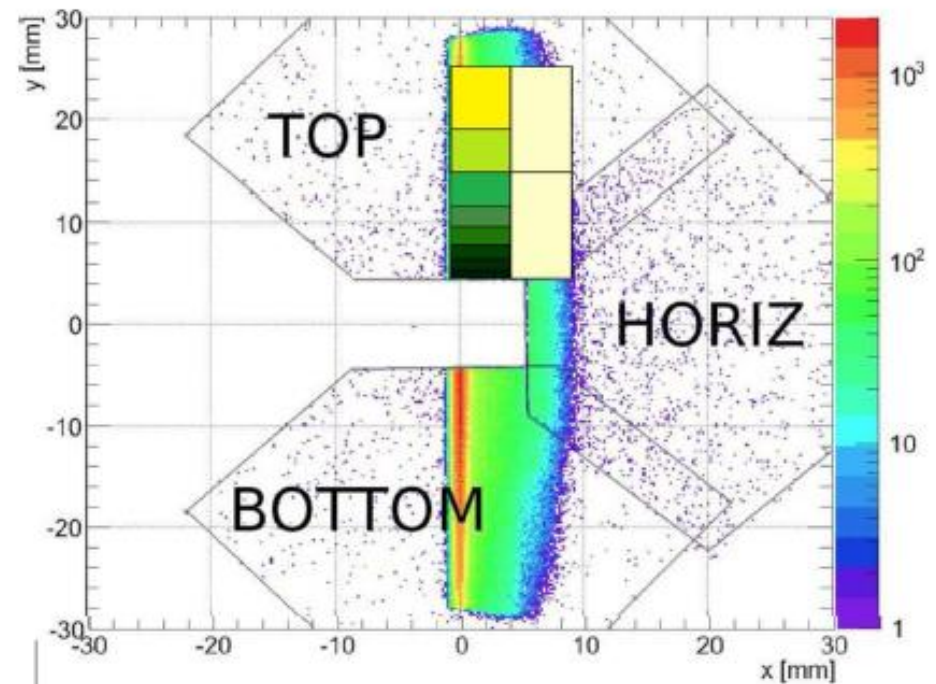
TOTEM 2015 TEST BEAM

H8/2015 Test Beam



Timing measurement of incoming proton at RP

- Identify vertex position measuring the arrival time of the proton
 - Aim at a time resolution of around 80-100ps or better for a single detector
 - one detector package >> 4 measurements >> timing resolution down to 70-50 ps
 - correspond to a few cm of longitudinal position
 - Allows identification of the event vertex in CMS
- Pixel of diamond CVD detectors
- Different size pixels w. uniform occupancy

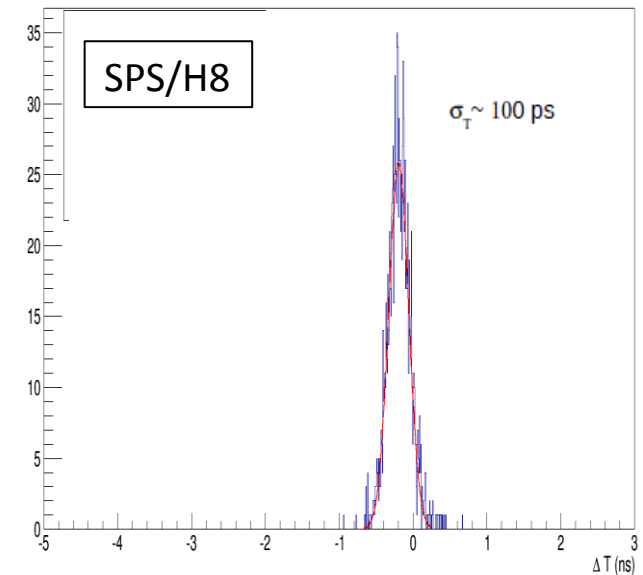
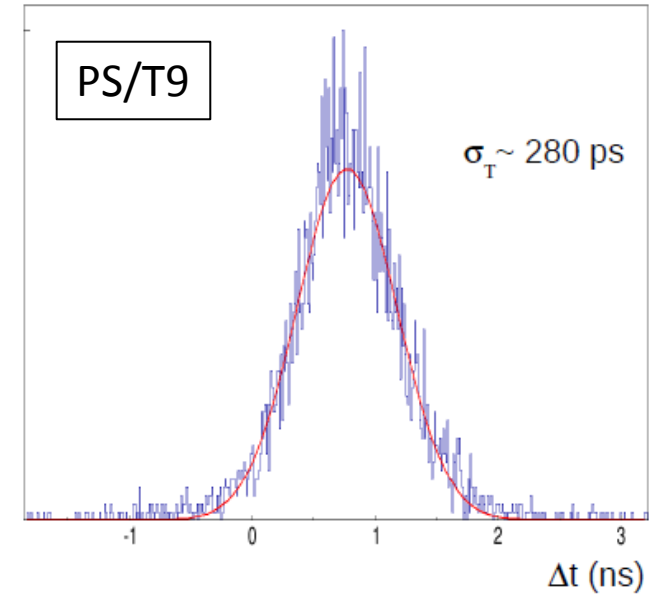


STATUS:

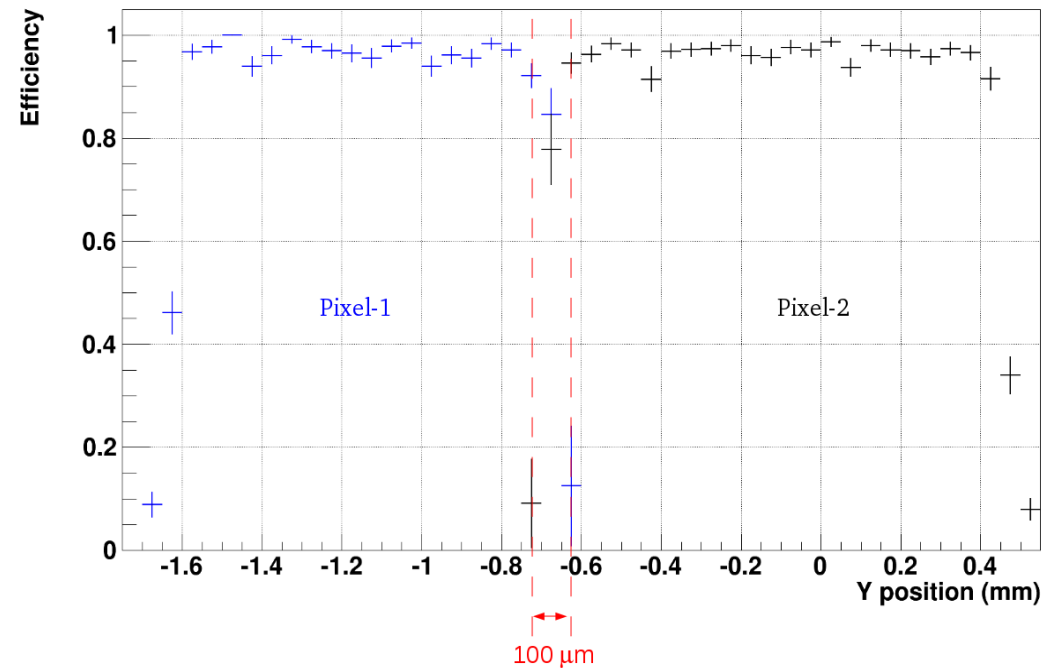
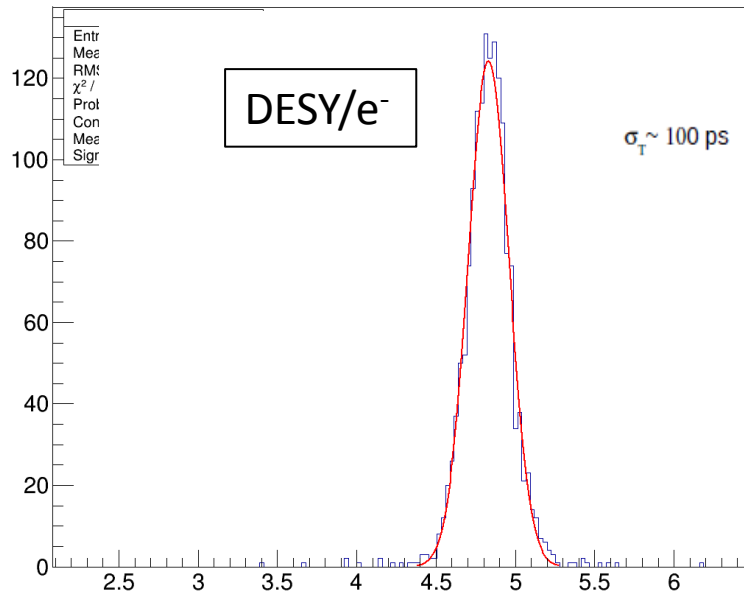
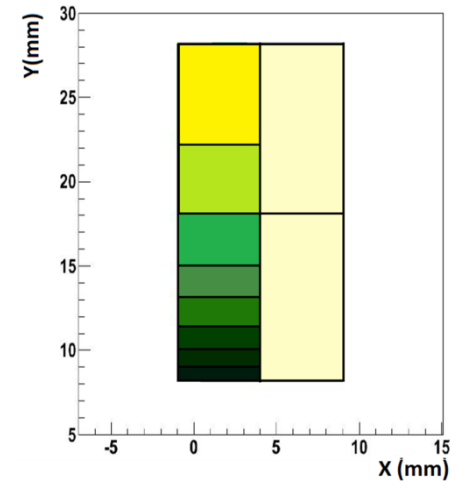
- Tests in PS/T9 (July 2014)
 - First timing measurements with commercial detectors (280 ps)

- Tests in H8 (Oct-Dec 2014)
 - Oct:
 - Tests with new amplifier (180 ps)
 - Dec:
 - GSI built detectors small pixel (80ps)
 - New amplifier, GSI metallized detectors large pixel (100 ps)

Time difference between the 2 detectors



- Tests in DESY (Feb. March 2015)
 - First tests on hybrid (2 channels, full design)
 - reproduced 100ps resolution
 - First tests with pixels of final size
 - Measured efficiency with DESY silicon telescope



TOTEM Program in H8/2015

Final tests and commissioning of timing detectors to be installed in the LHC

TOTEM Timing Upgrade TDR:

TDR CERN-LHCC-2014-020 , TOTEM-TDR-002 , 15 September 2014

Requested:

20 days in 5 periods of 4 days of main user in H8C, distributed over the beam available periods :

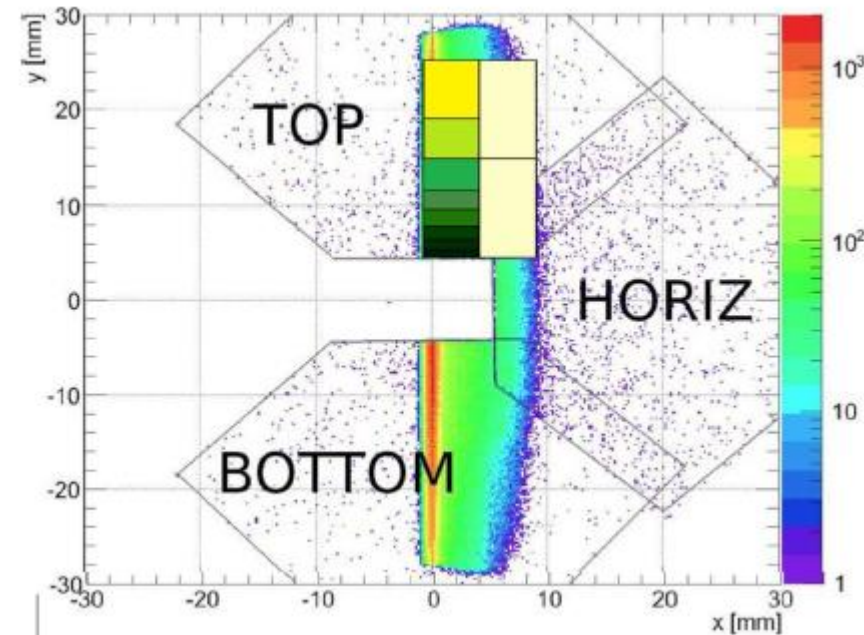
4 days At the beginning (Around April 27)

4 days around June 15

4 days around July 27 (final tests of first det. to be installed in LHC in September)

4 days around October 12

4 days At the end of the Run i.e. Nov



Hi Marco,
I see 3 periods for Totem: in June, August and September.
Then there are possibilities for you to run in parallel to all
other H8 users except the calorimeters.
Cheers,
Henric.

2015 H8 Test Beam

Tracking tests: Need hadrons (pions) of good intensity (pixel size)

- Finalize Amplifier optimization.

Amplifier developed by the TOTEM Pilzen Group: Laboratory measurements provided interesting results. Test beam data needed to confirm them with the LHC detectors.

- R/O chain characterization.

Resolution, rate and triggering capability with proposed final R/O.

- Final hybrid with 12 channels.

Tests of the final detector plane: hybrids with crystals and amplifiers.

- Commissioning of the 16 detectors that will be installed in the LHC (after September)

After final checks the detectors are installed in the LHC, as soon as possible during technical stops