

BCMIF TDCs

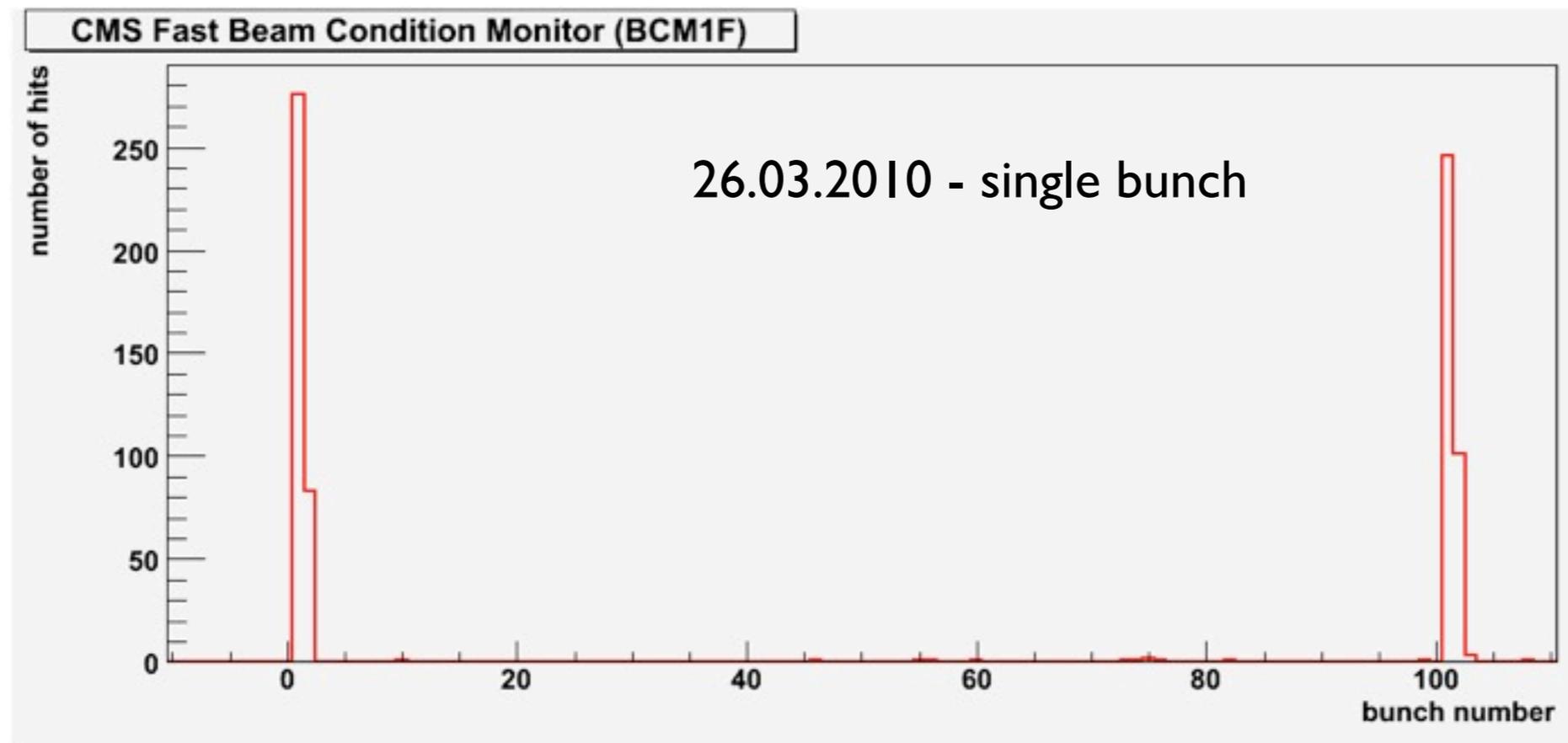
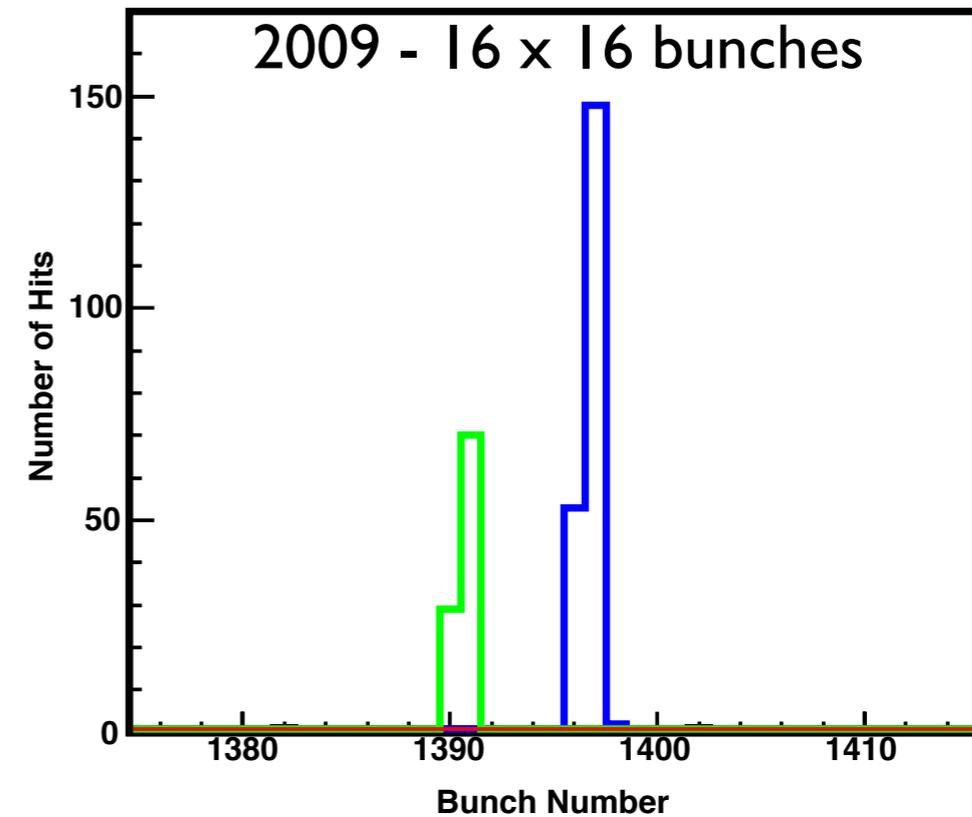
Roberval Walsh

FCAL-CMS Weekly Meeting 27.04.2010

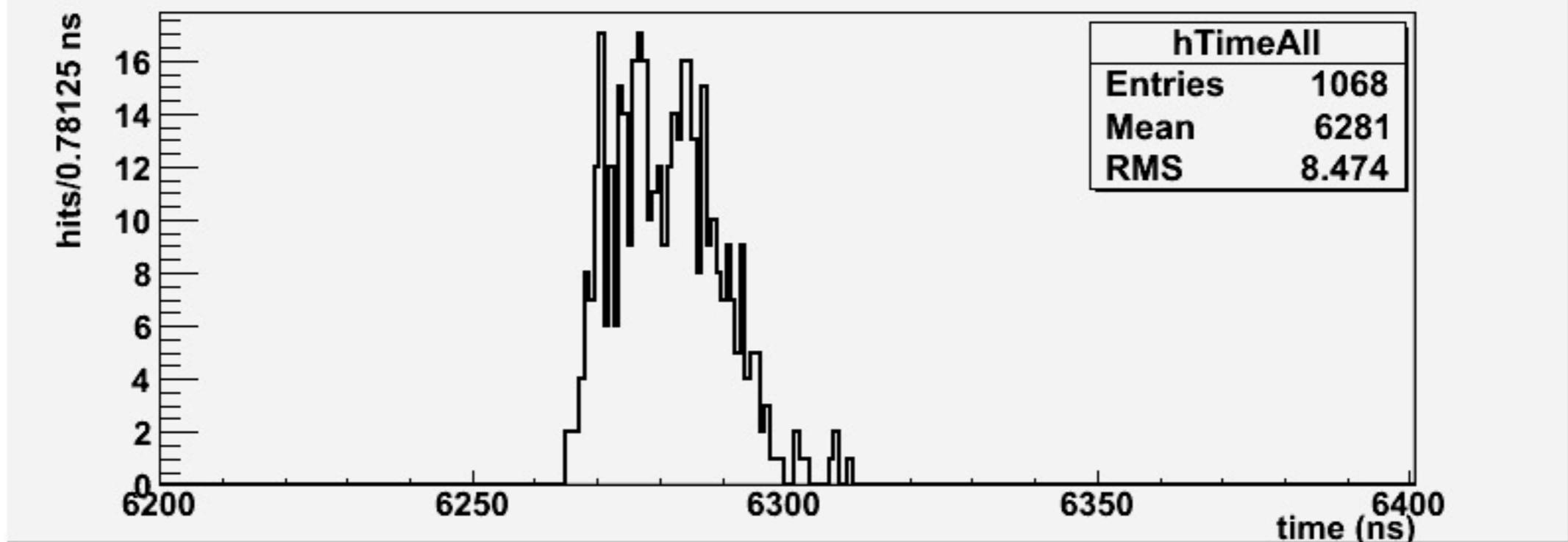
Adjacent bin shifted!

$$\text{bunch_number} = (\text{tdc_time} - 6275) / 24.95 + 1$$

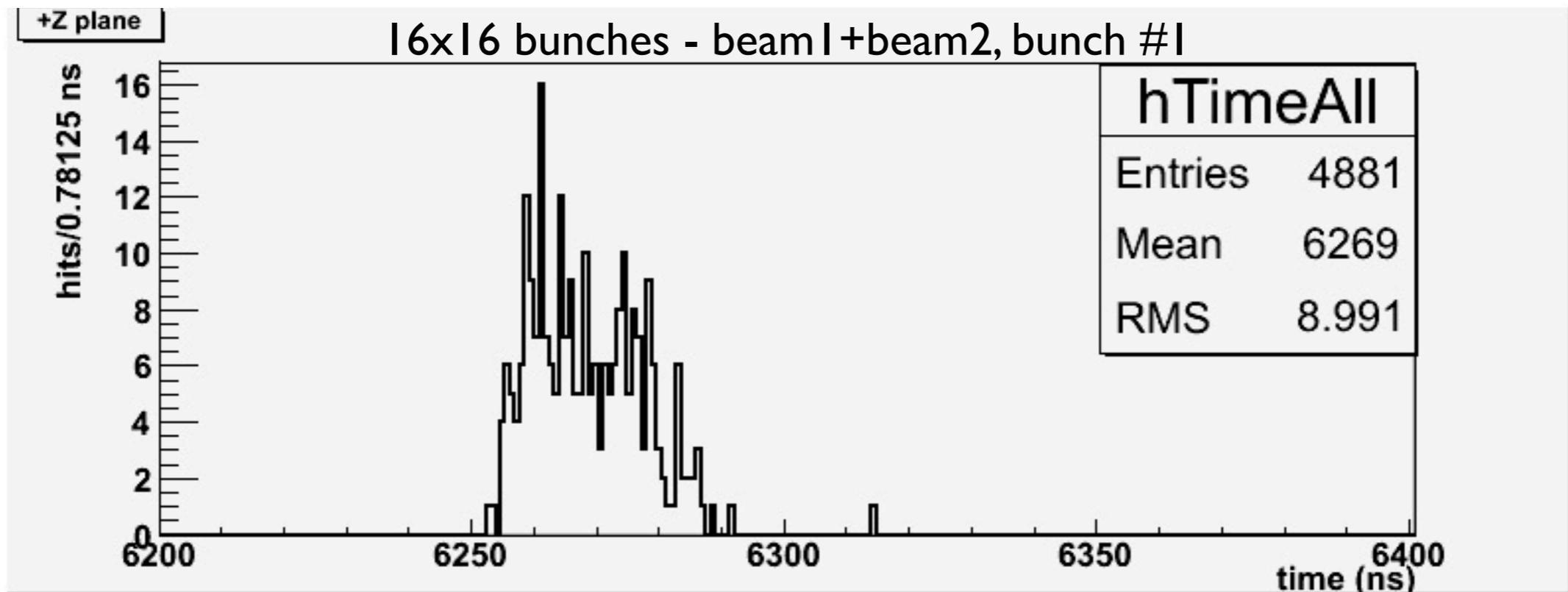
Assuming collision time reference = 6275 ns
with respect to the orbit trigger.



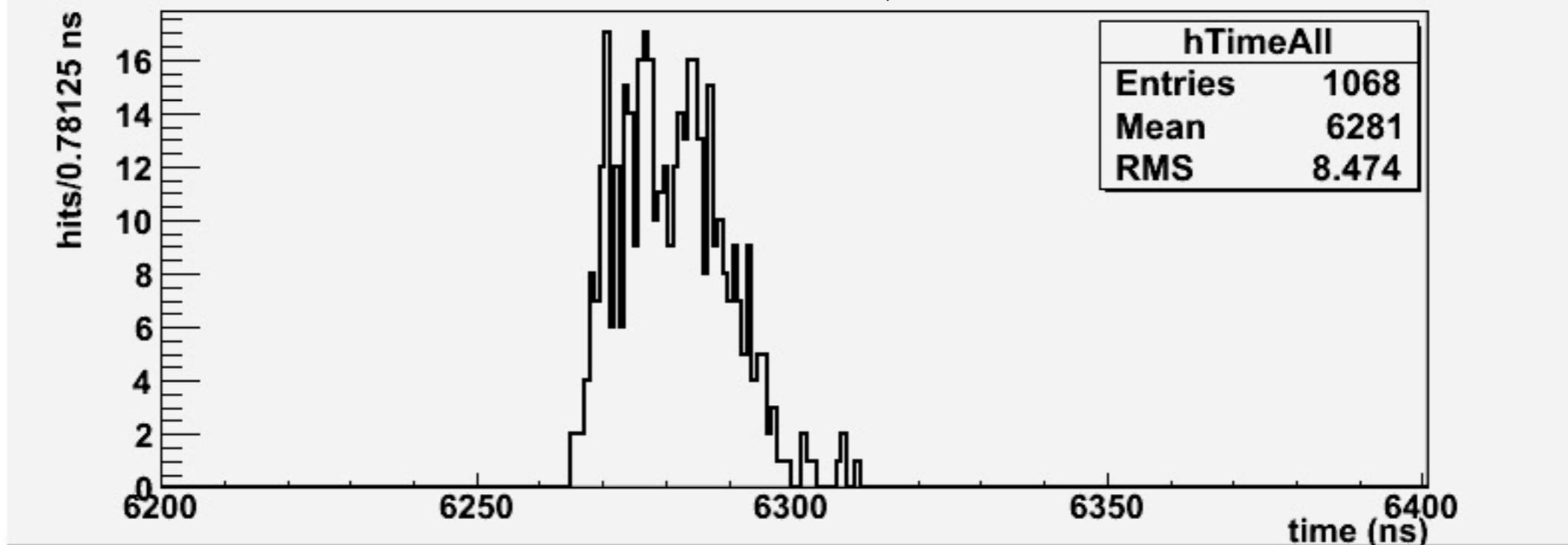
26.03.2010 - beam1, bunch #1



12 ns shift! Veto board?

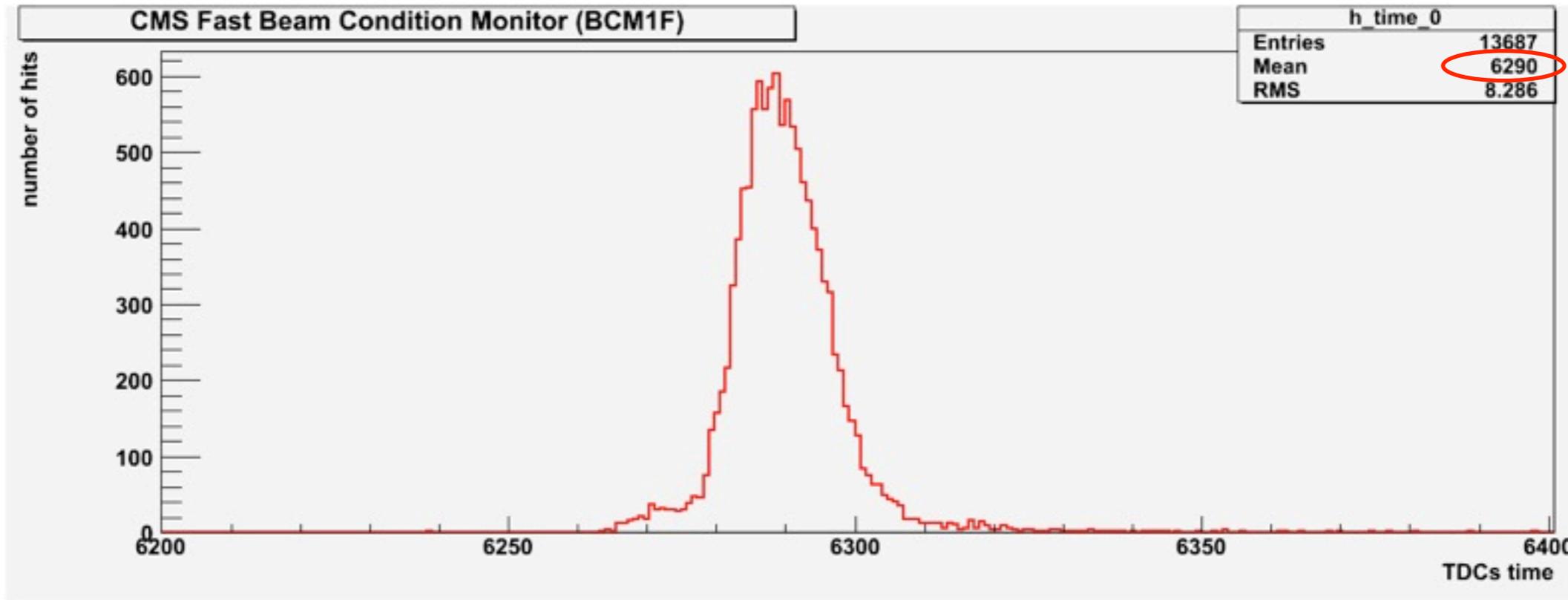


26.03.2010 - beam I, bunch #1



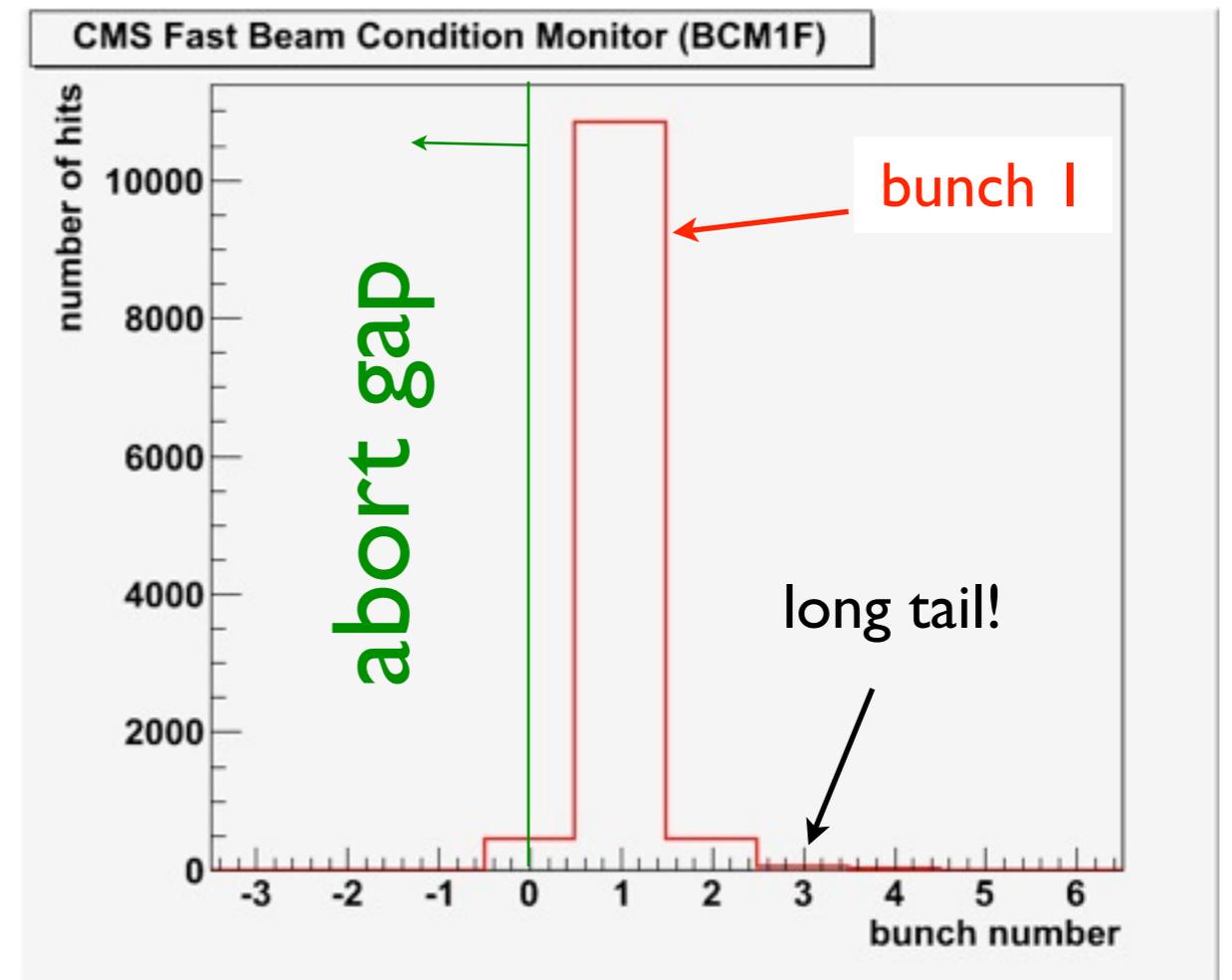
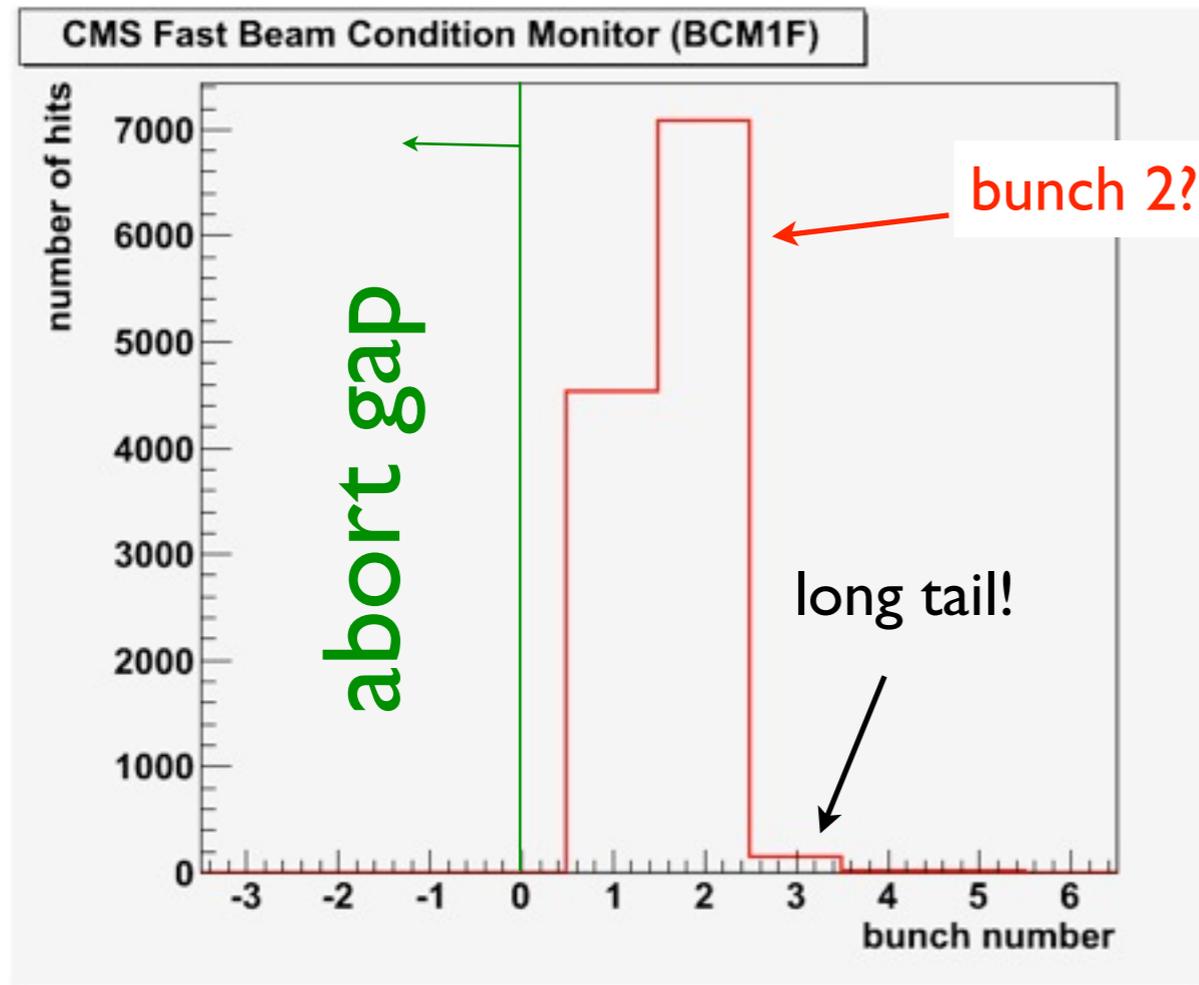
9 ns shift! Not the veto board!

14.04.2010 - bunch #1



14.04.2010 - David contacted me:

“ATLAS claims to see parasitic collisions before bunch 1”

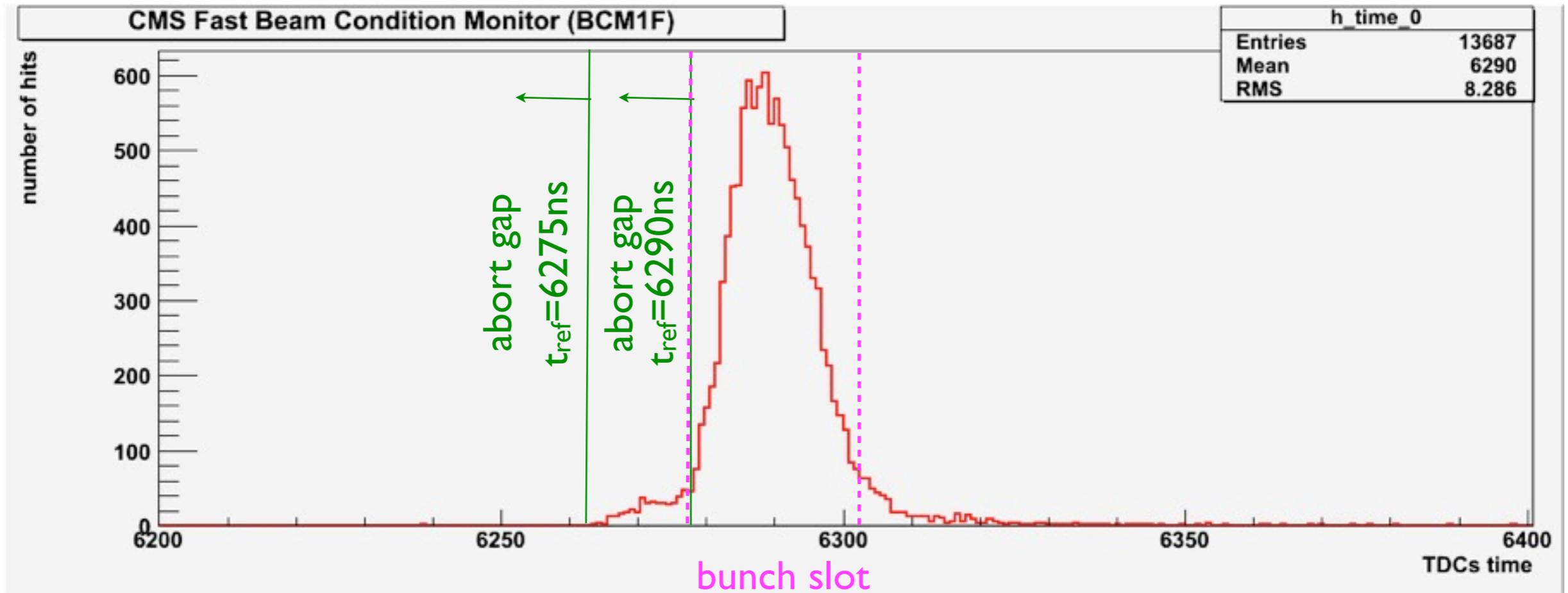


$$\text{bunch_number} = (\text{tdc_time} - 6275)/24.95 + 1$$

$$\text{bunch_number} = (\text{tdc_time} - 6290)/24.95 + 1$$

All depends on the reference and definitions!

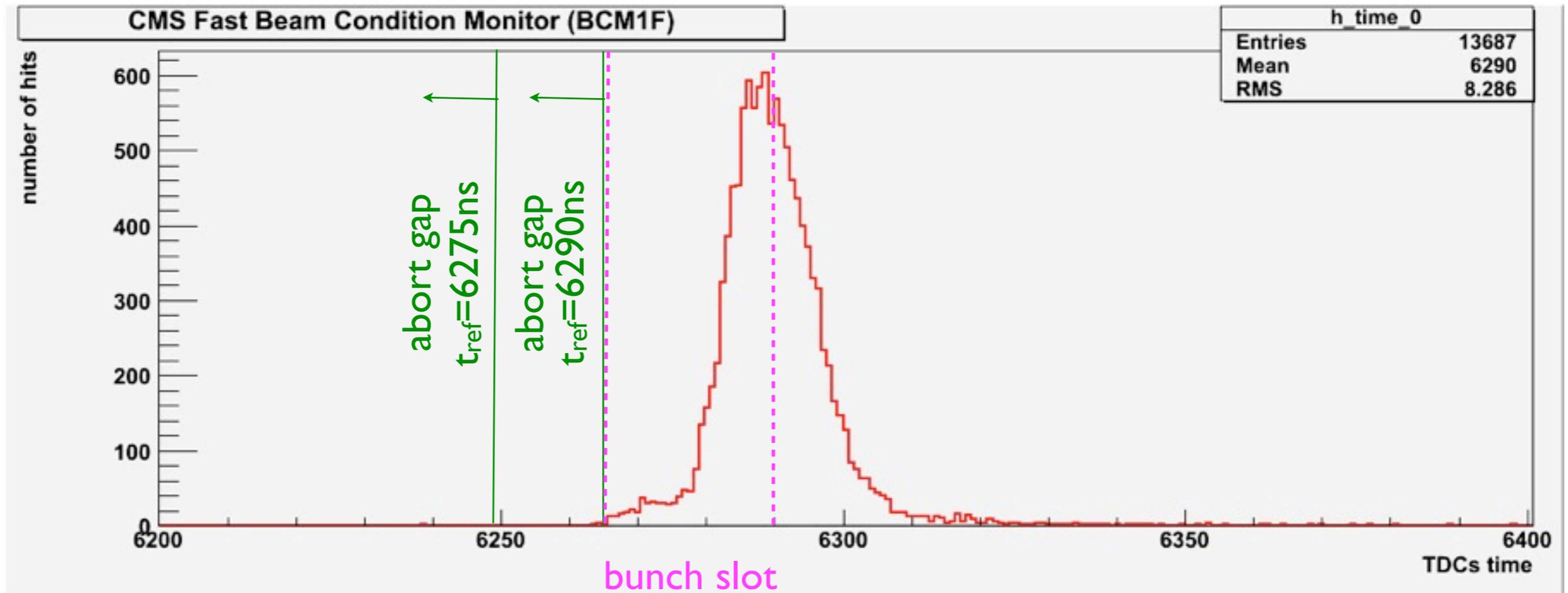
14.04.2010 - bunch #1



The bunch slot, 24.95ns, is defined around the time of the collisions (centre of the distribution)

This is the definition to extract the bunch number, but could also be used to define the abort gap limit?

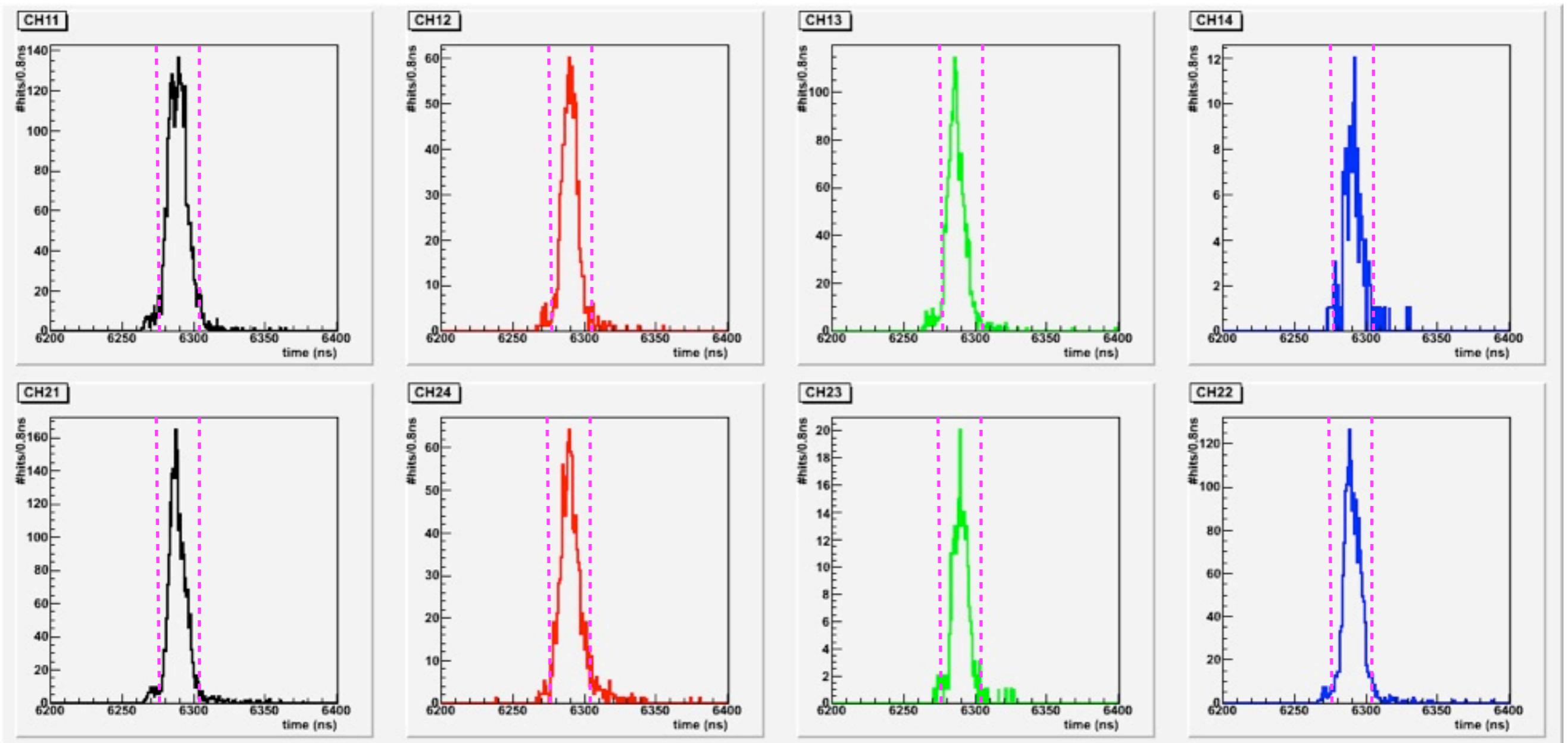
14.04.2010 - bunch #1



The bunch slot, 24.95ns, is defined with its upper edge at the time of the collisions (centre of the distribution)

Should this definition be used to define the abort gap limit?

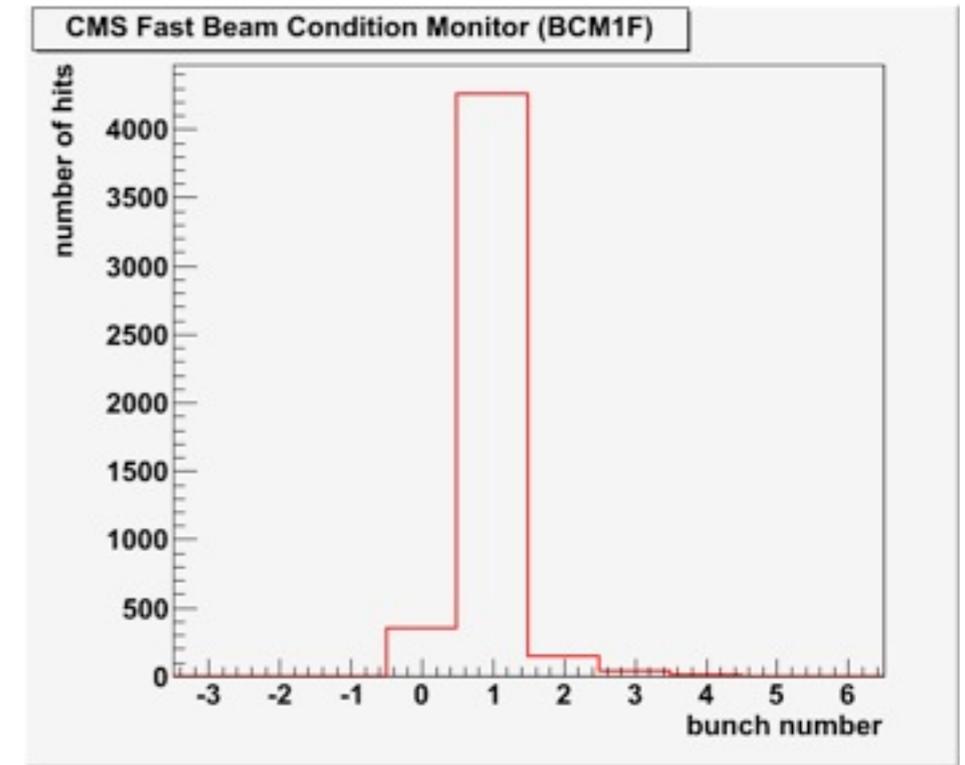
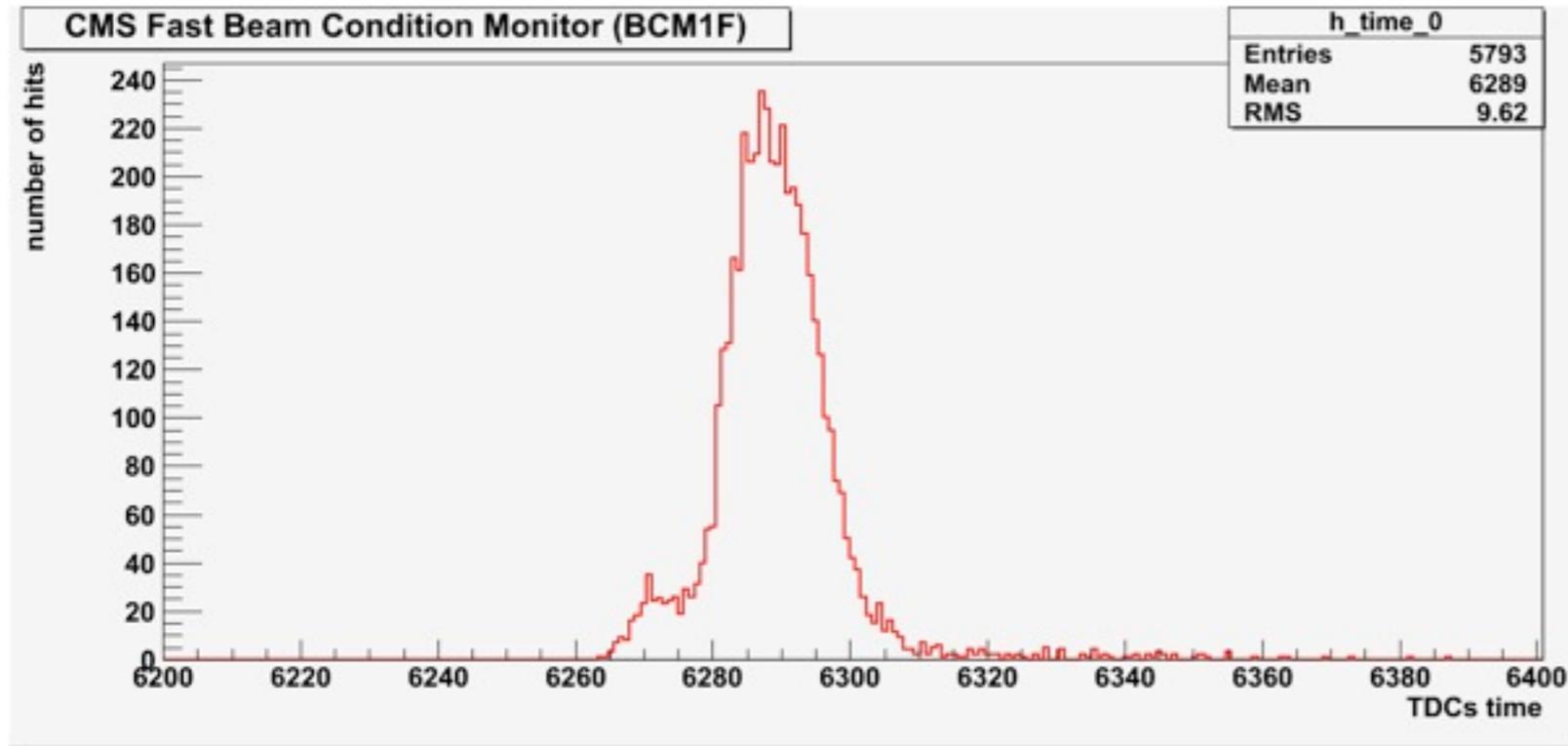
14.04.2010 - bunch #1 - per BCMIF channel



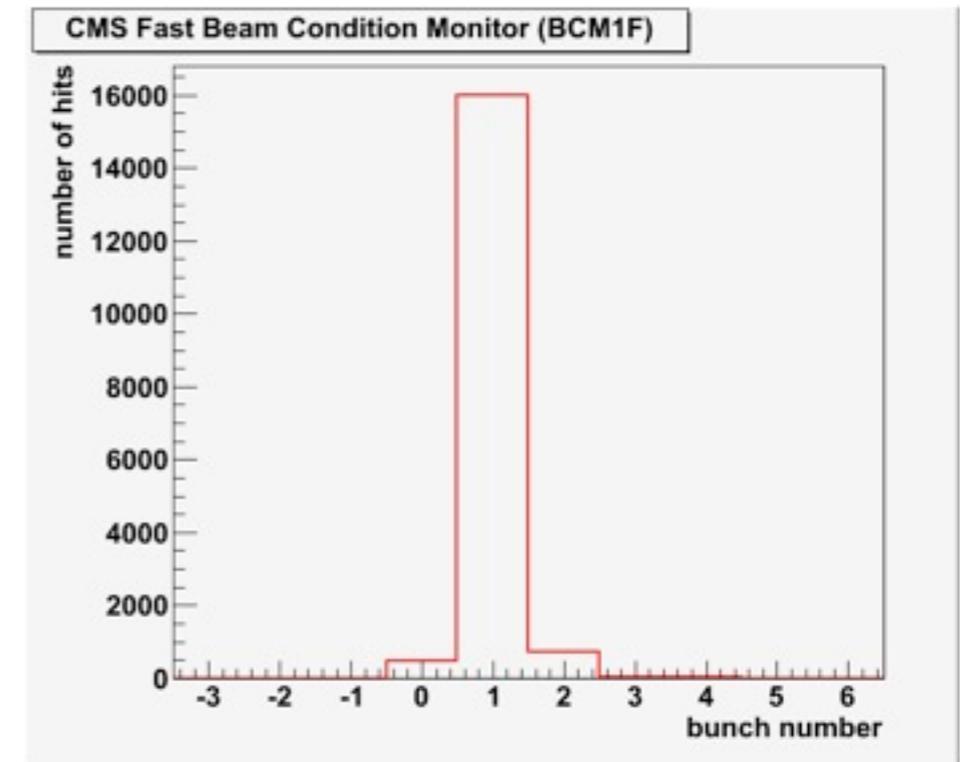
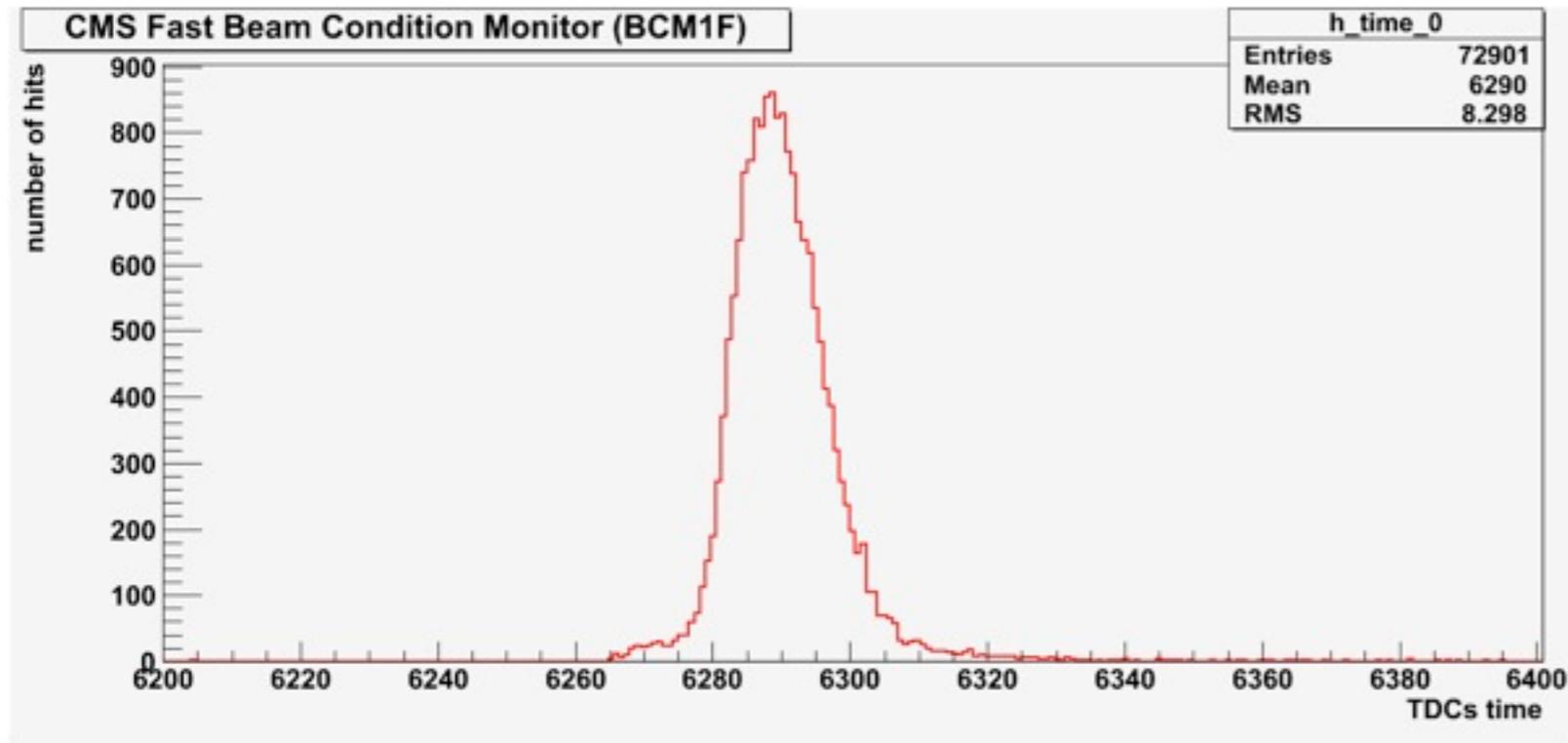
Need calibration! Need a 48-hour-day!

Time of collisions at ~ 6290 ns also in other fills.

20.04.2010_17:30-19:30 - bunch #1



24.04.2010_03-05h - bunch #1



- Need to implement an online check of time shifts. Probably the same way it is done for the bunch number plot.