

Status Report of BCM1F

Maria Hempel

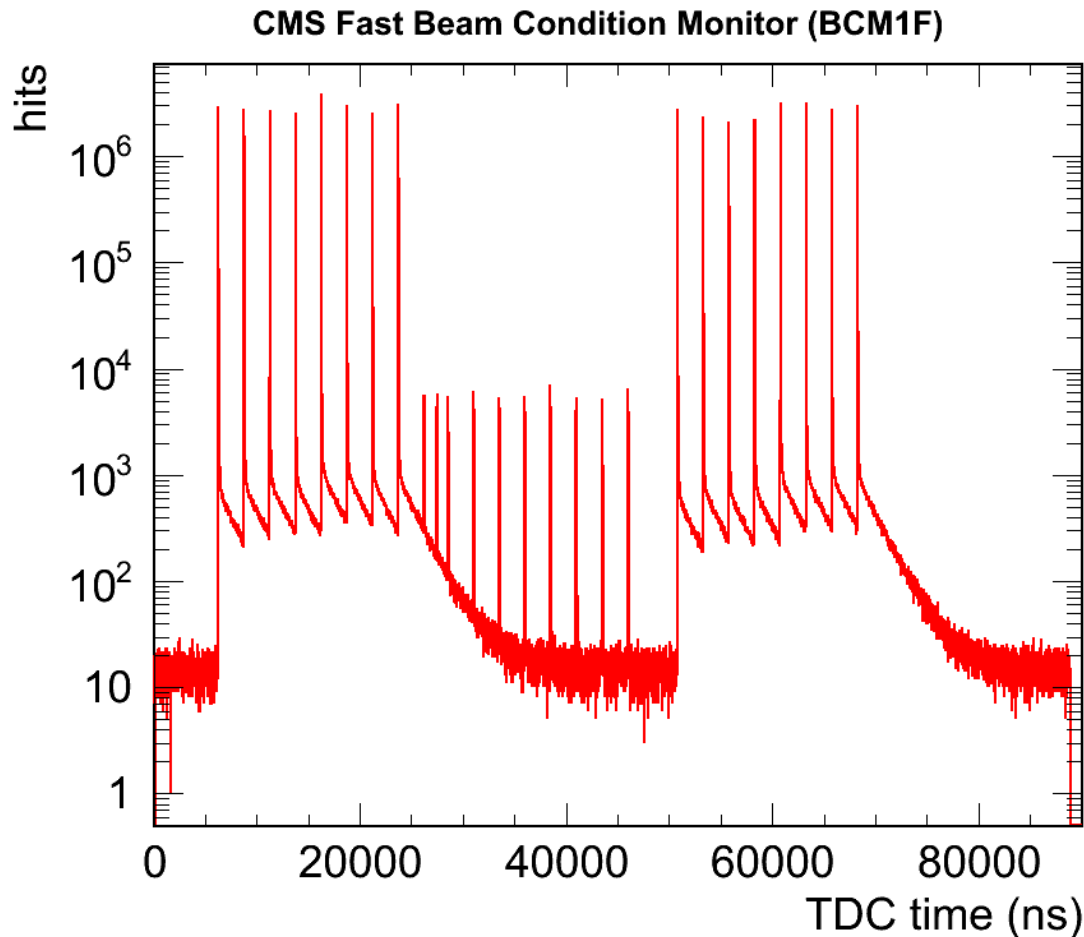
TDC Measurements

Bunch Identification

Date: 2.8.2010

$I=10^{12}$

26 bunches, 16 collisions in CMS

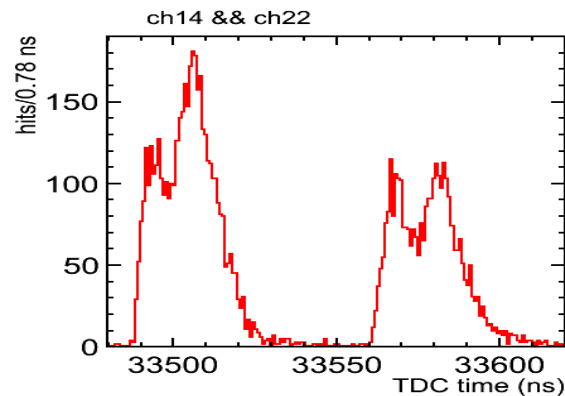
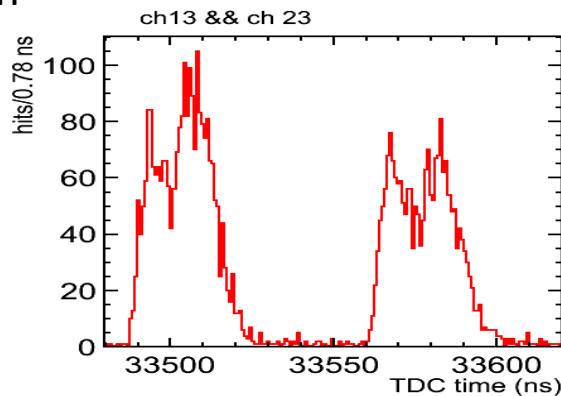
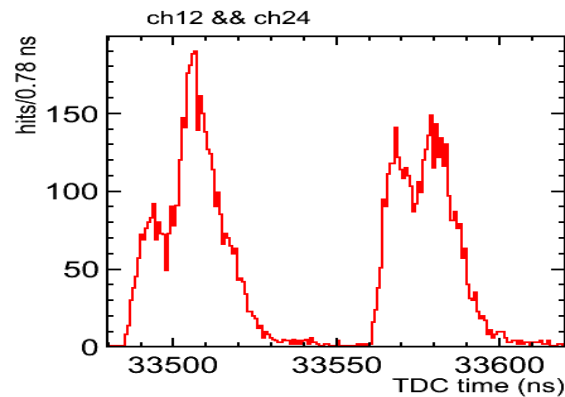
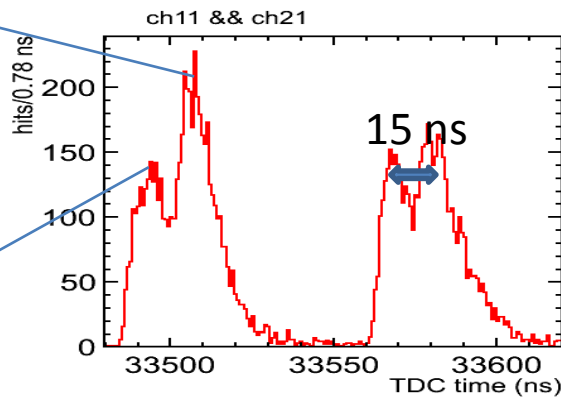


Time of Flight

- BCM1F can separate ingoing and outgoing particles

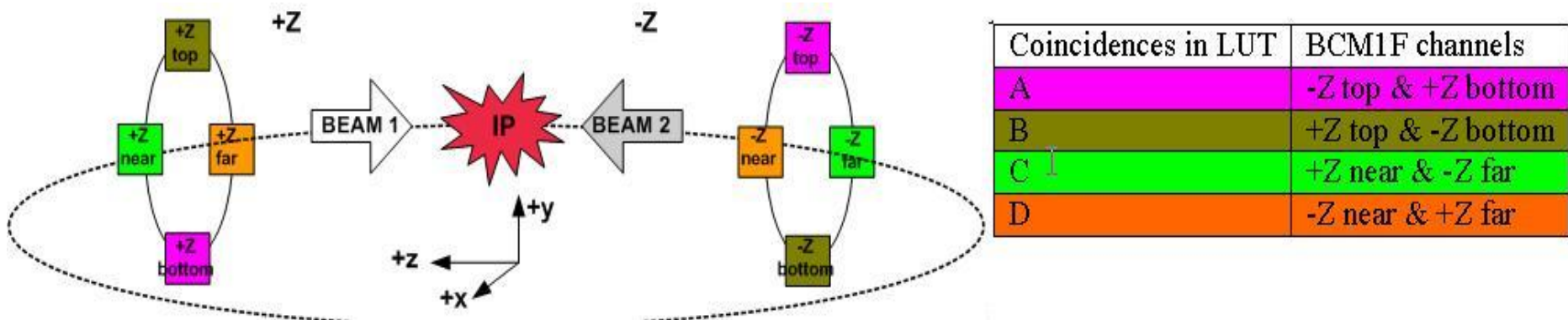
CH21 (+Z)
Outgoing
bunch

CH11 (-Z)
Ingoing bunch



Scaler Measurements

- Count rates: they provide CMS background 1 to LHC
- Coincidences of collision products for Luminosity estimation

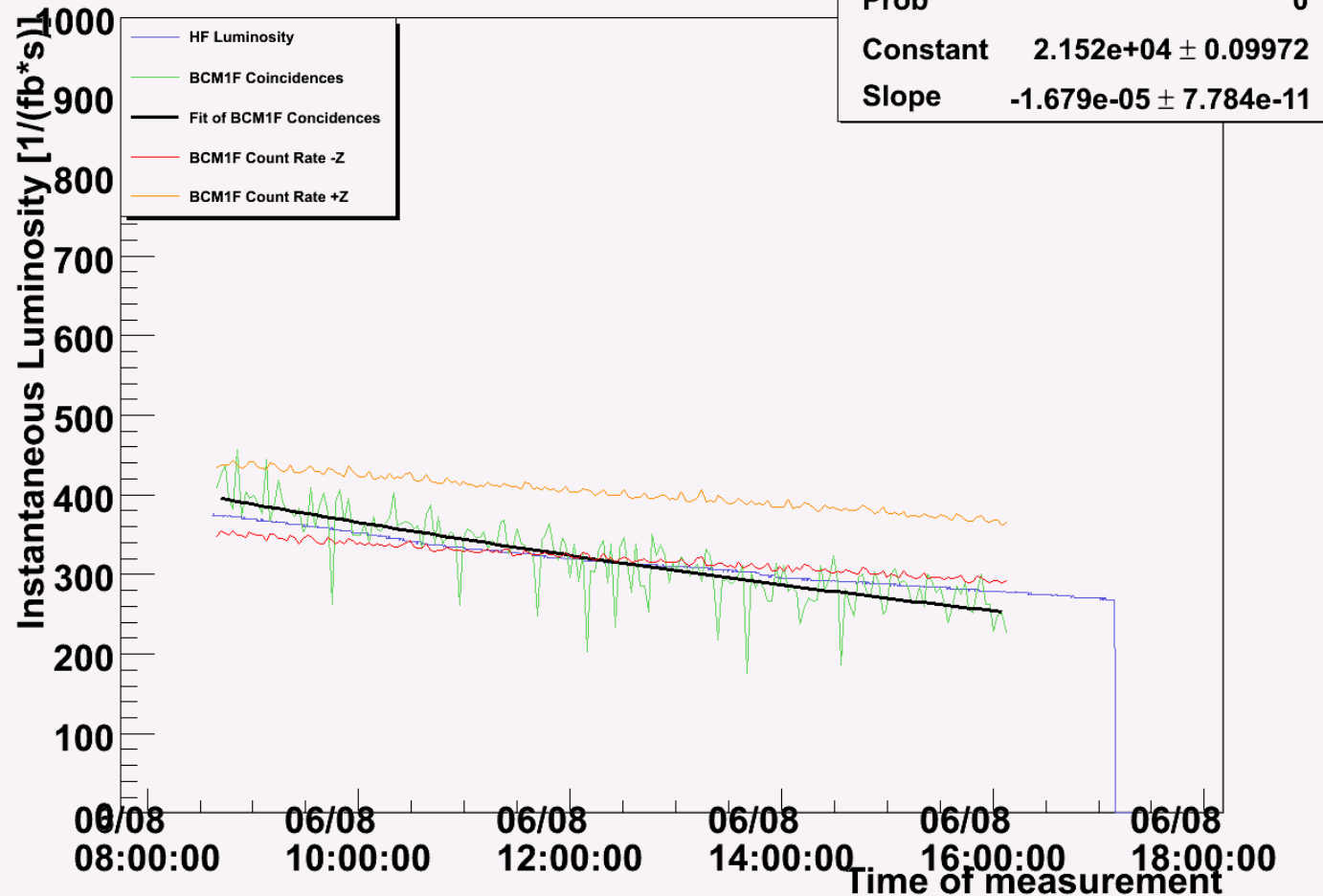


To check possibility of using BCM1F as a Luminosity Monitor we cross check with HF Lumi

- BCM1F counts 4 back-to-back coincidences
- sum up the coincidences and compare with HF Luminosity
- multiply the HF Luminosity with a scale factor
- Make a calibration of BCM1F to use BCM1F as a Luminosity Monitor
- In addition, plot the Scaler Count Rate of +Z and -Z

Data of 6.8.2010

Graph



Scale Factor for
Coincidences : 220

Scale Factor for Count Rate
+Z,-Z: 1/165

Conclusions

- BCM1F data acquisition is working fine
- Data is as we expected
- We need more understanding for BCM1F as a Luminosity monitor -> waiting for more Luminosity data of HF