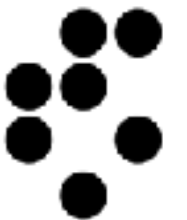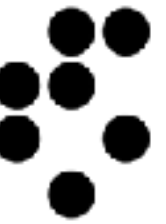# DBM luminosity update

DBM weekly
4.12.2018

Boštjan Maček
Jožef Stefan Institute

Hybernation

- timing scan performed - analysing data

- run finished

- all the recorded lumi data is copied to EOS:

    - /eos/atlas/atlascerngroupdisk/det-lumi/2018_dbm

- setup scripts and software tagged and pushed to GIT

- everything prepared to be replicated after 2 years

- DBM lumi can safely go into hibernation

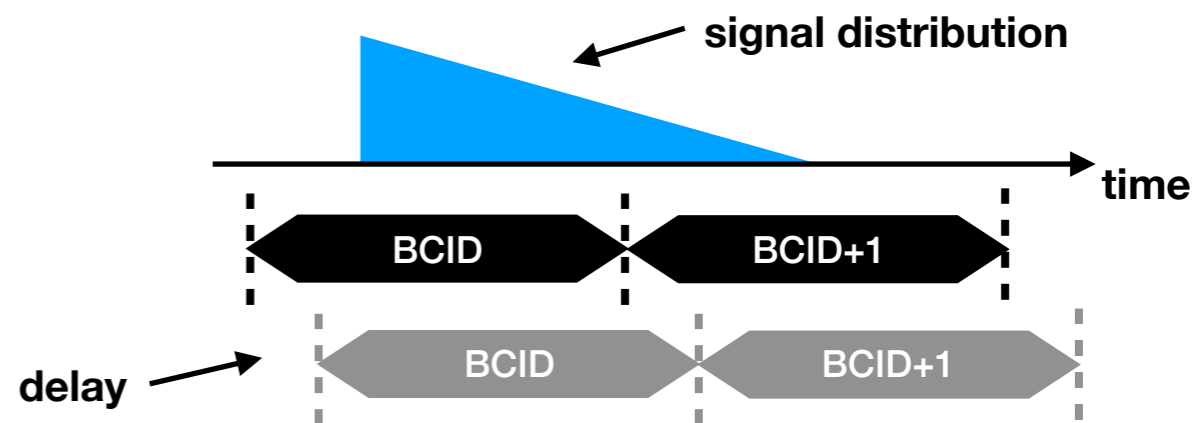Comments (03-Dec-2018 09:26:17)

Powering test campaign

Energy upgrade needed: expected 2 years

Timing scan

- significant portion of signal observed in the bunch following the colliding one

- delay on HitBus used

- for each delay 90s of data recorded
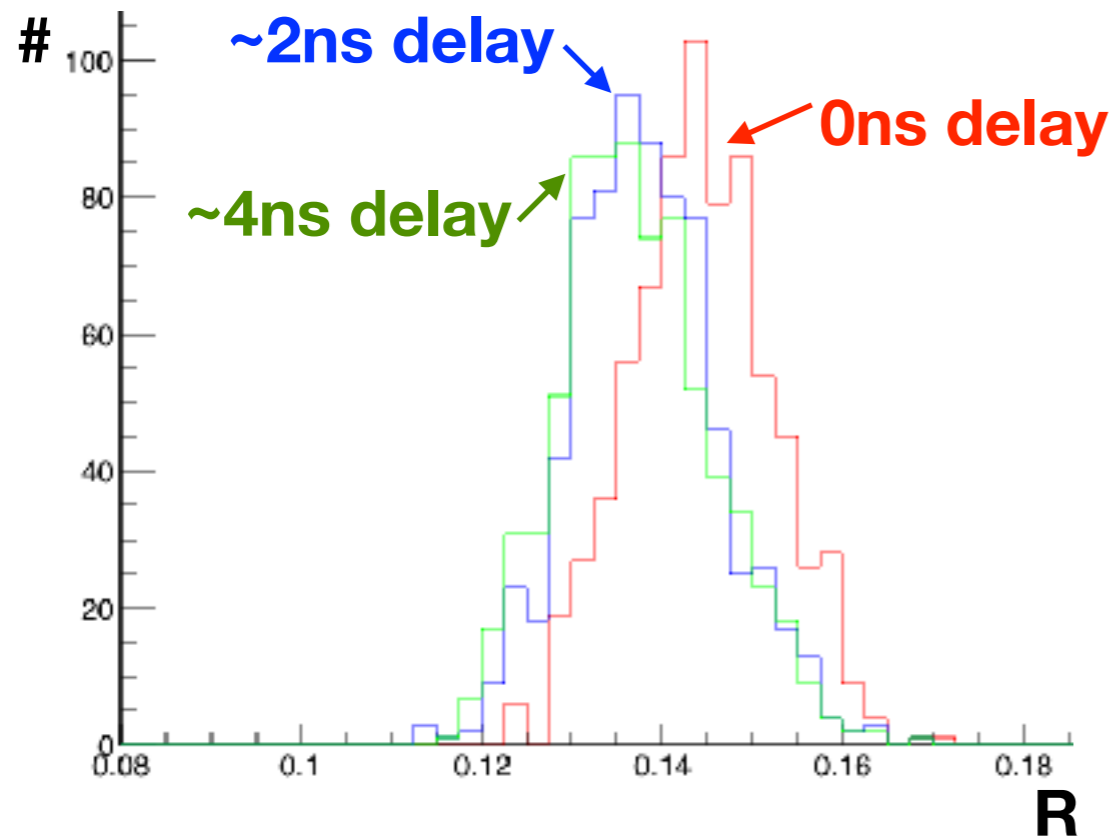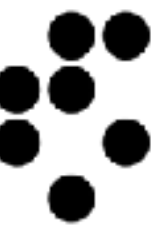
- Pb run with 100ns bunch spacing used

- for each filled bunch ratio is calculated:

$$R = r_{N+1}/r_N$$

- in N+1 bunch there are typically ~400 events registered

  - 5% statistical error → ±0.007

  - observed distribution is due to statistics
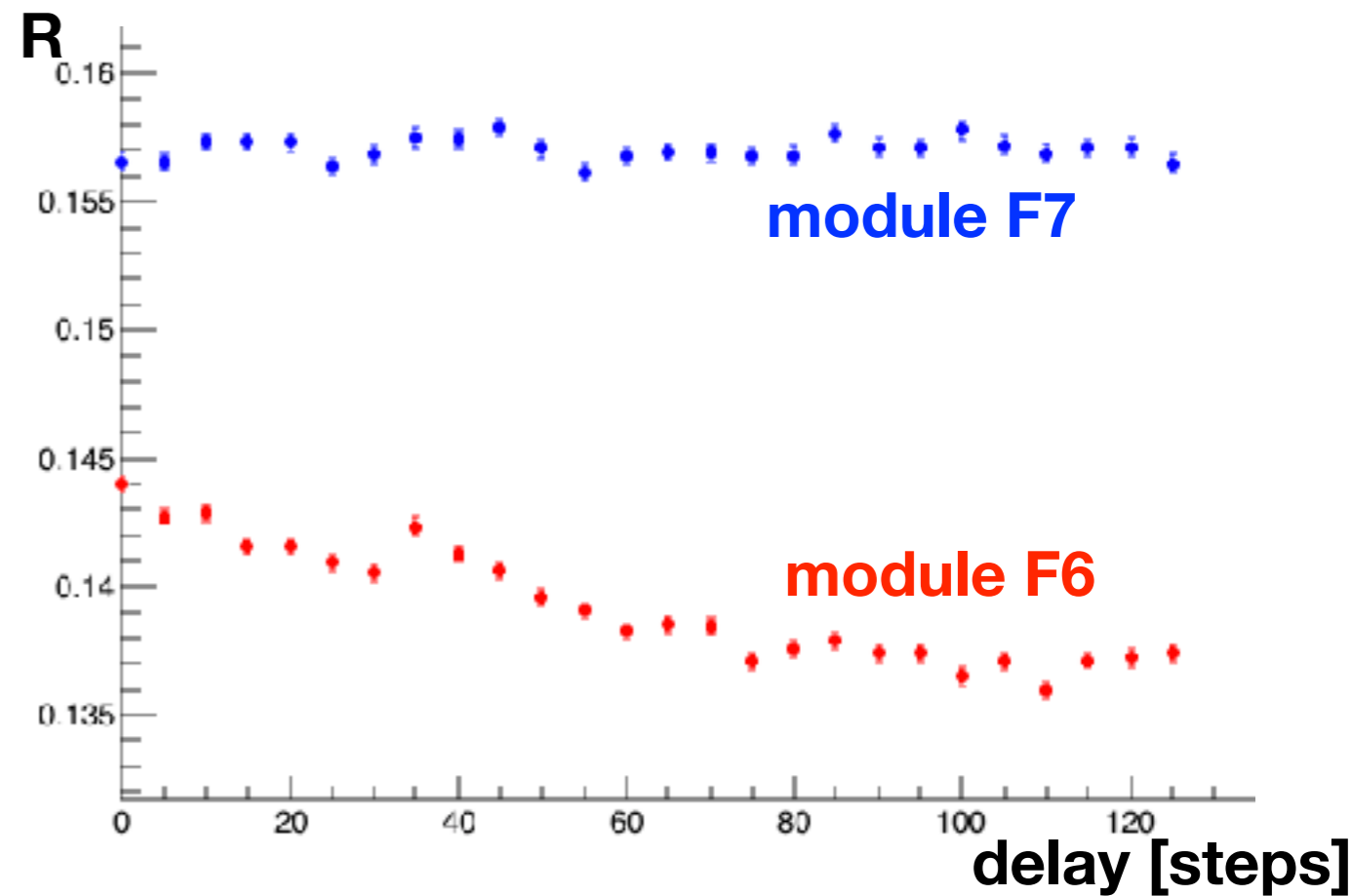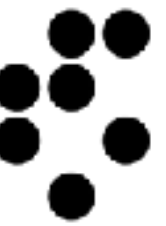
Scan results

- **~2ns delay**
- **0ns delay**
- **~4ns delay**
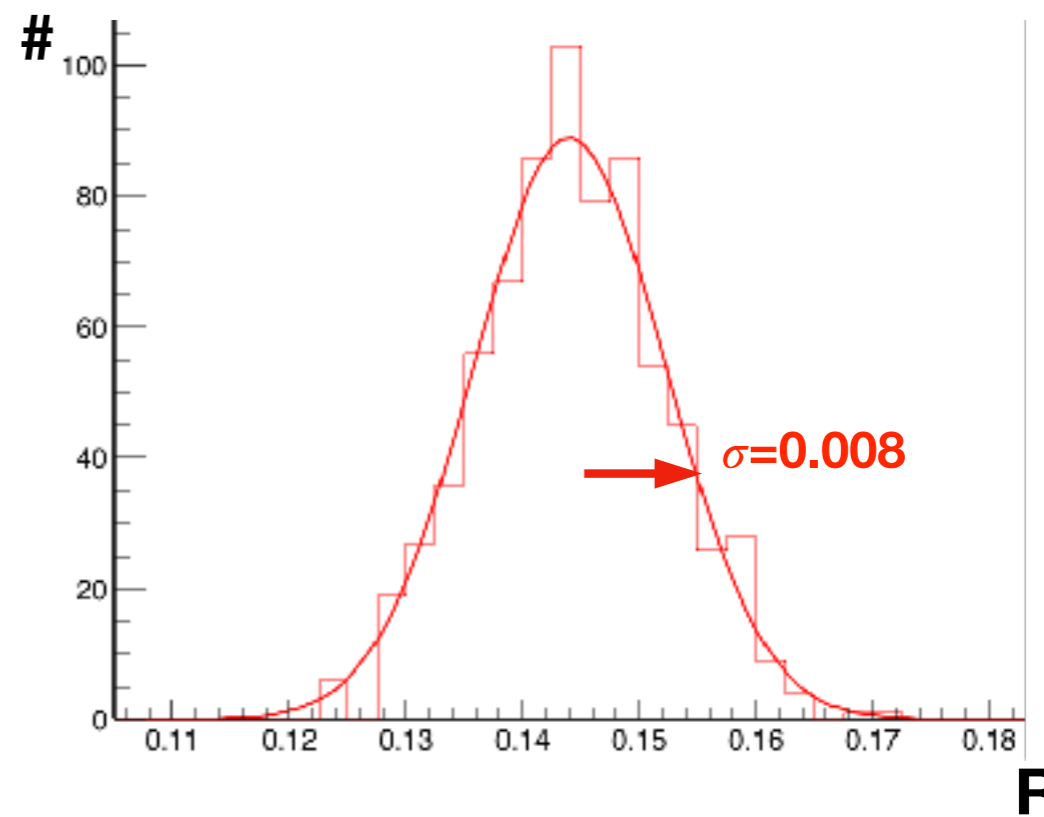
- observable shift of distribution with delay

- distribution width remains consistent

- different modules have different dependance
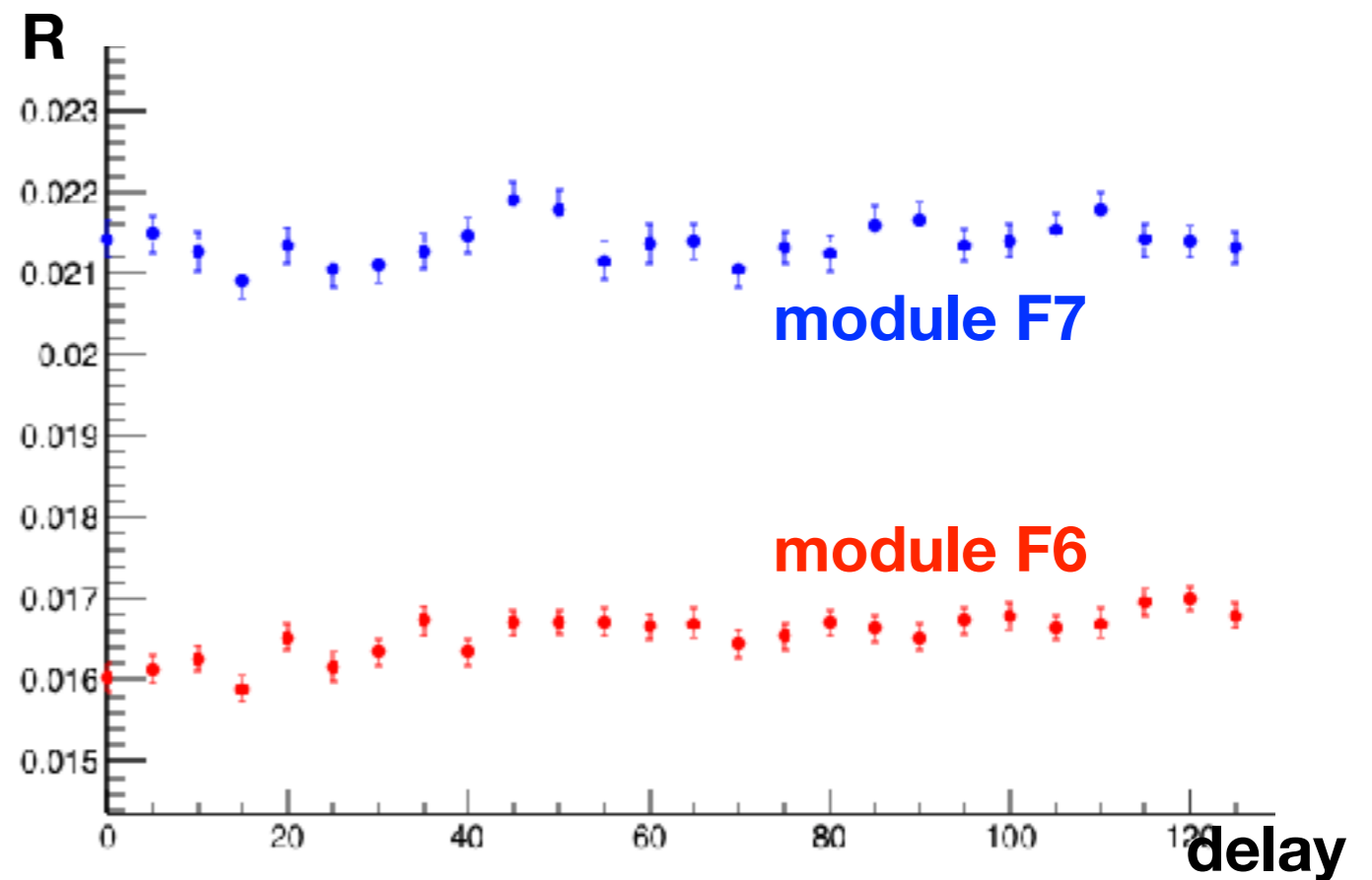

module F7

module F6

delay [steps]

Early bunch

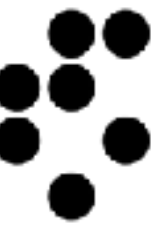- for each filled bunch calculating:

$$R = r_{N-1}/r_N$$

- different modules have different dependance

- slight increase for module F6

module F7

module F6

Conclusion

- end of very fruitful luminosity running running

- timing could be improved but wider range of delays should be scanned