

All Experimenters' Meeting

CMS and LHC report

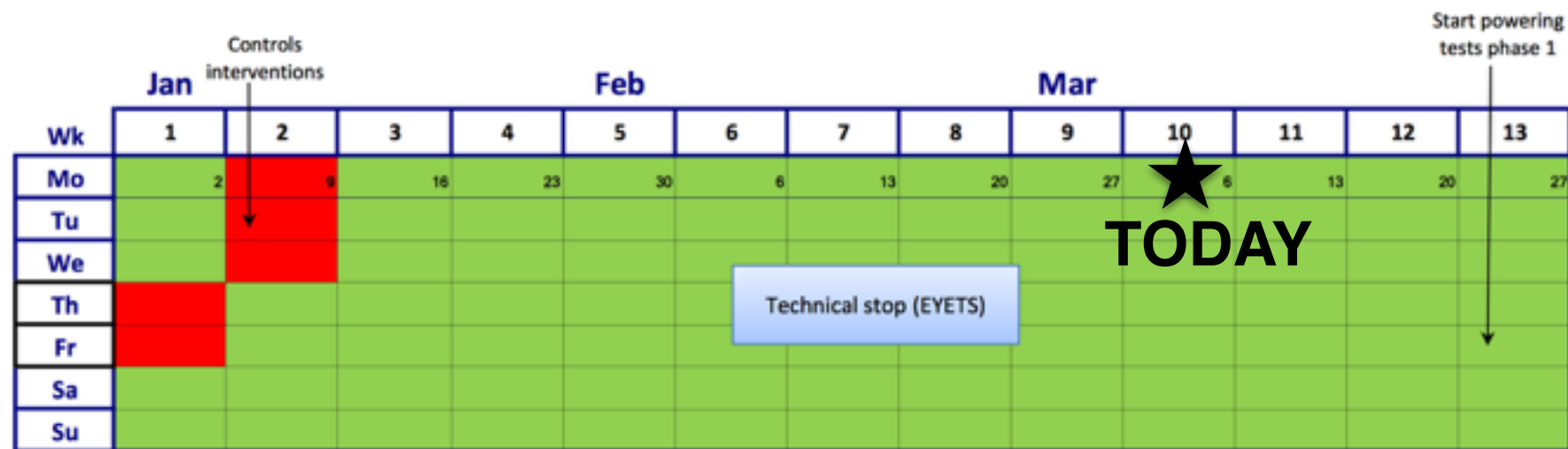
Nadja Strobbe (Fermilab)

March 6, 2017



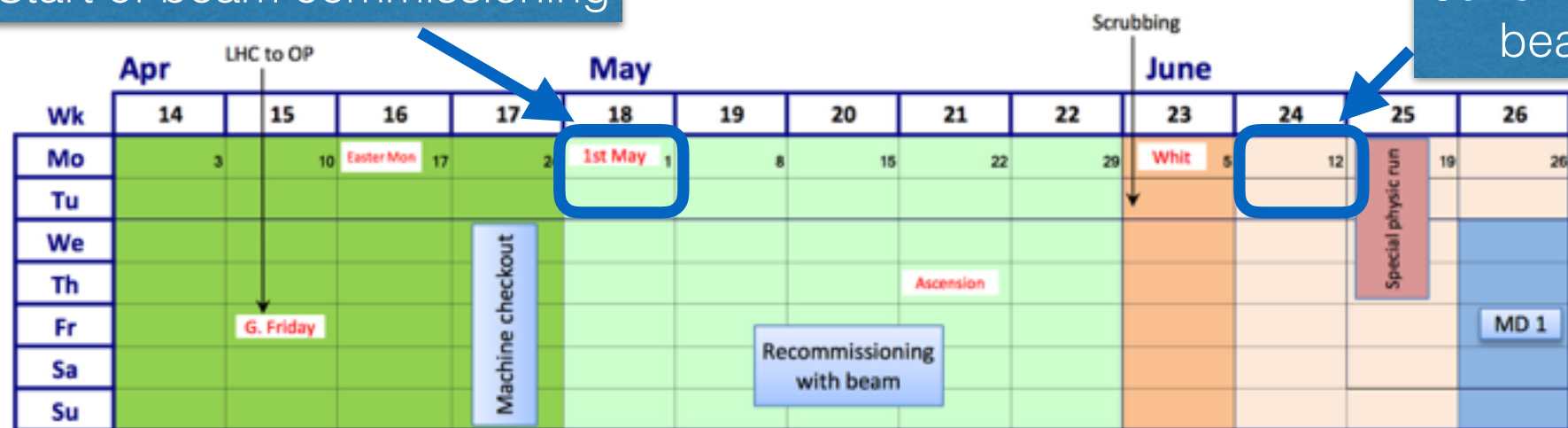
LHC schedule

- From Chamonix workshop:
 - Keep energy at **13 TeV** for Run2 ('17-'18), go to 14 TeV for Run3
 - Goal of **45 fb⁻¹** integrated luminosity with stable beams ~50% of the time (cf. 41 fb⁻¹ delivered in 2016)
 - No heavy-ion run in 2017



May 1: Start of beam commissioning

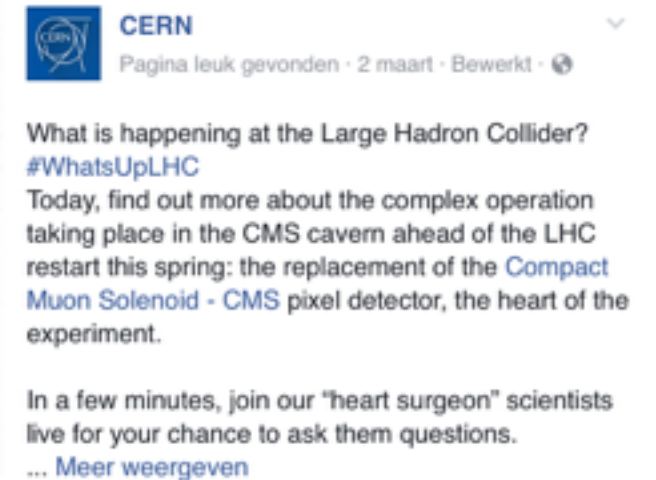
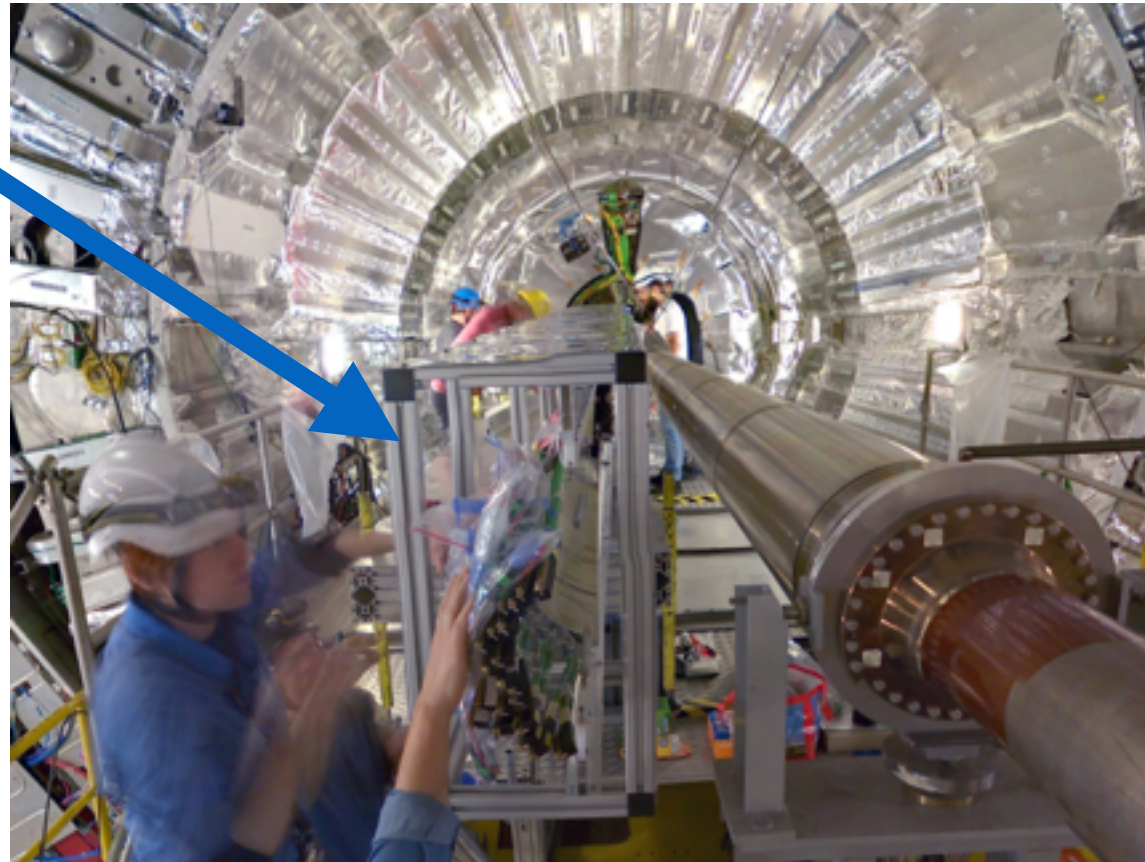
June 12: Start of stable beams collisions



CMS status

Installation of new pixel tracker!

- Barrel-pixel (BPIX) installed last week
- Forward-pixel (FPIX) being installed this week

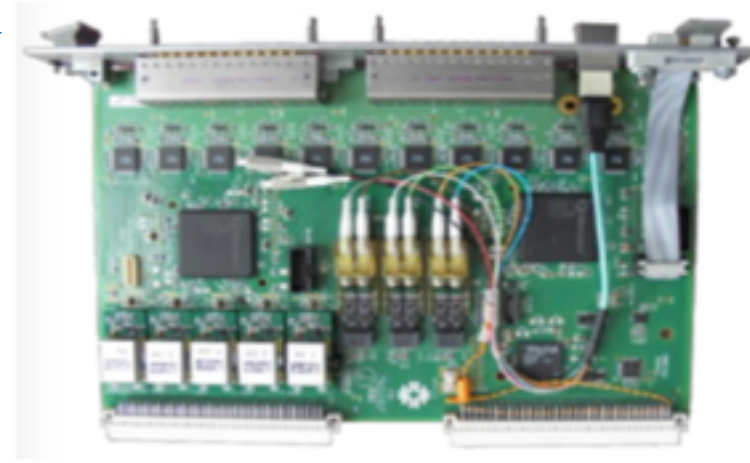


Forward hadron calorimeter (HF)

- Installed reworked PMT boxes (for dual readout)
- New readout electronics installed

Endcap hadron calorimeter (HE)

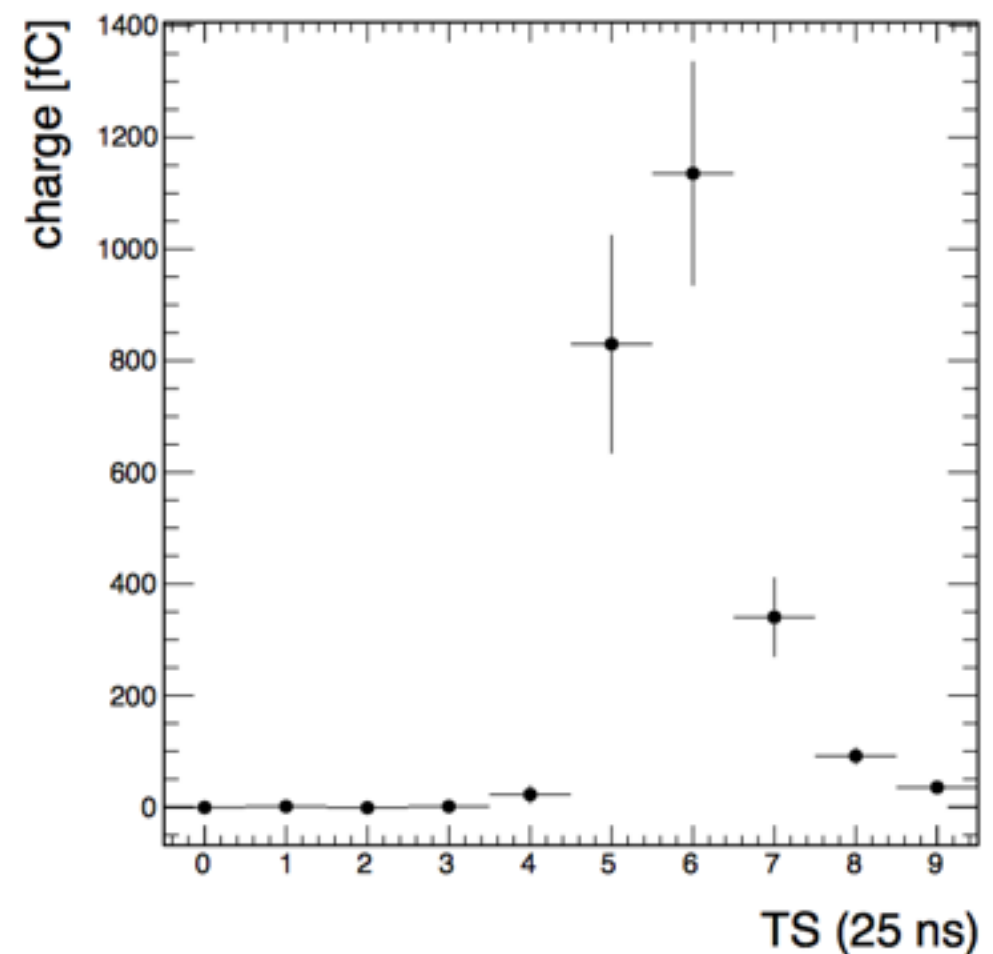
- 1 readout box installed and working
- Decision to be made whether to leave it in



CMS commissioning

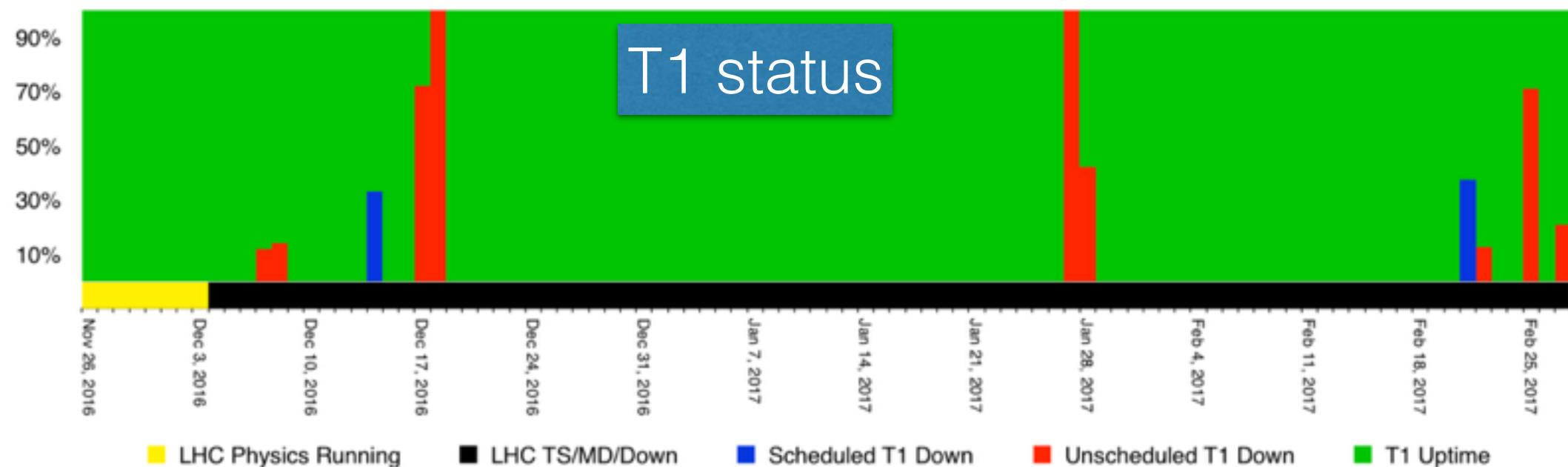
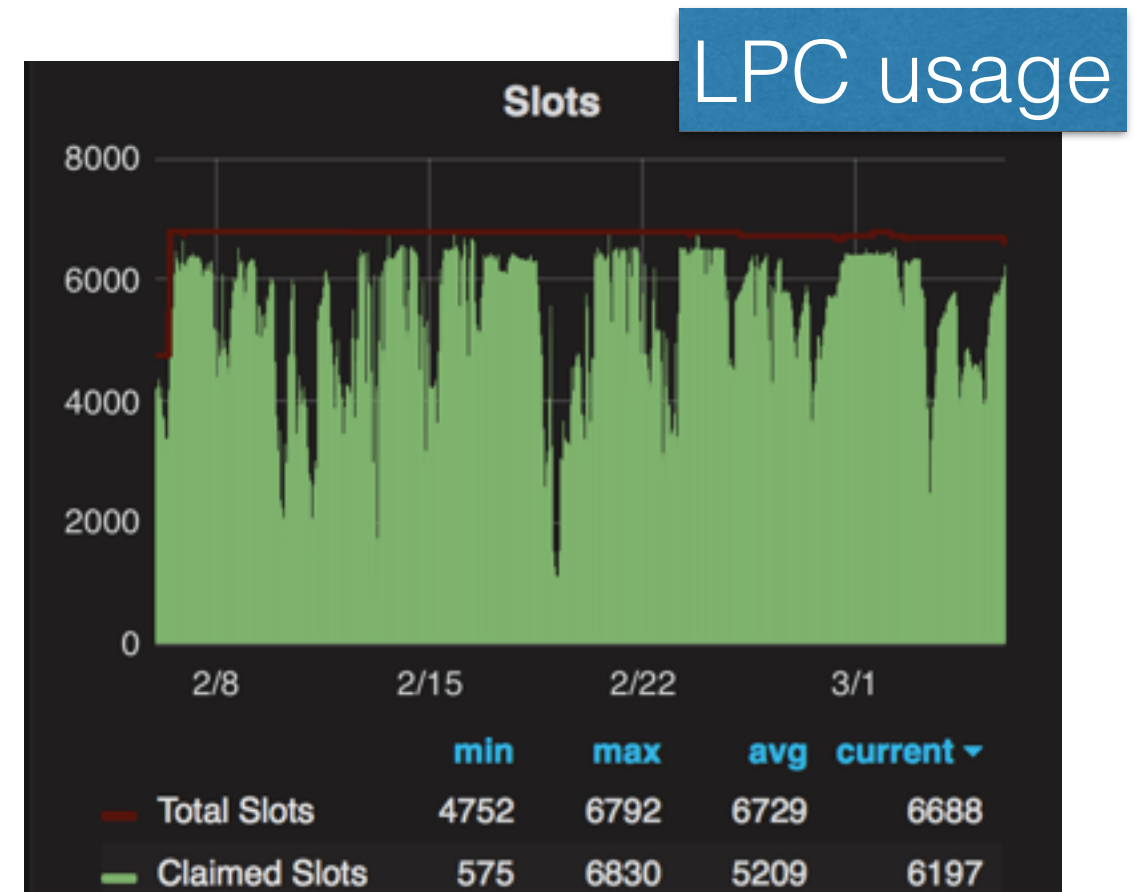
- **Mid-Week Global Runs** with Cosmics
 - MWGR#1 = 08-10 February
 - Re-established global operation of CMS
 - Confirmed trigger timing
 - Successfully included the new HE readout box (only 1 day after installation!)
 - MWGR#2 = 01-03 March
 - MWGR#3 = 15-17 March
- **CRUZET** (Cosmic RUnning at ZEro Tesla) and **CRAFT** (Cosmic Running At Four Tesla)
 - 27th of March through April
 - Goal: >95% efficiency with all detectors
 - Include pixels by mid-April

Average pulse shape in HE of 7 cosmic muon events recorded during MWGR#1 (1 photo-electron = 40 fC)



Computing

- CMS production workflows in preparation for Moriond conference mostly completed. Plenty of analysis jobs running
- Some unexpected T1 down time (dCache down, PhEDEx down)
- Also some EOS crashes due to increased usage by LPC users



Summary

- Extended Year End Technical Stop (EYETS) still ongoing
 - Upgraded HF PMTs and readout electronics installed
 - Upgrade of 1 HE readout box successful
 - New pixel detector being installed
 - Commissioning with cosmics is ongoing
- Preparations for Phase II upgrades ongoing
 - Conceptual design proposal for **MIP Timing Detector** being reviewed. CMS decision to include in upgrade scope to be made early April.
- Analyses preparing for strong showing at Moriond conference