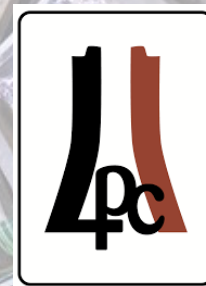
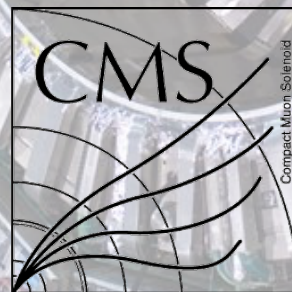


CMS Report - all experimenters meeting

Caterina Vernieri (FNAL & LPC Distinguished Researcher)
on behalf of the CMS experiment



LHC near-term schedule

<http://beams.web.cern.ch/content/accelerators-and-schedules>

We are here

	July			Aug			Sep						
Wk	27	28	29	30	31	32	33	34	35	36	37	38	39
Mo	3	10	17	24				21	28	4	11	18	25
Tu				MD 2									
We	TS1			VdM run								TS2	
Th										Jeune G			
Fr											MD 3		
Sa													
Su													

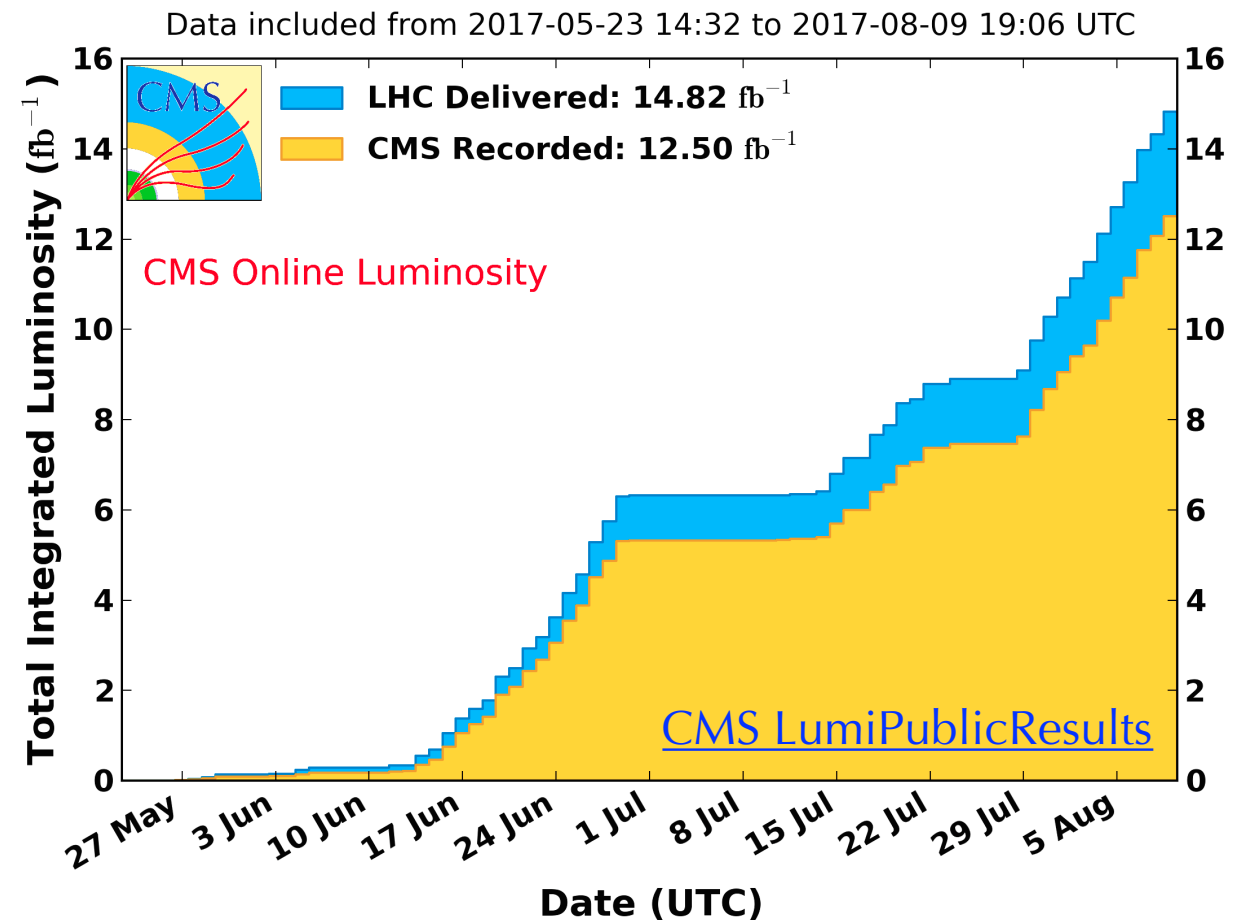
	Oct			Nov					Dec				End of run [06:00]	
Wk	40	41	42	43	44	45	46	47	48	49	50	51	52	
Mo	2	9	16	23	30	6	13	20	27	Special physic run	4	11	18	Xmas
Tu														
We				MD 4							Technical stop (YETS)			
Th														
Fr														
Sa														
Su														

	Technical Stop		Machine development
	Recommissoning with beam		Special physics runs (indicative - schedule to be established)
	Scrubbing (indicative - dates to be established)		

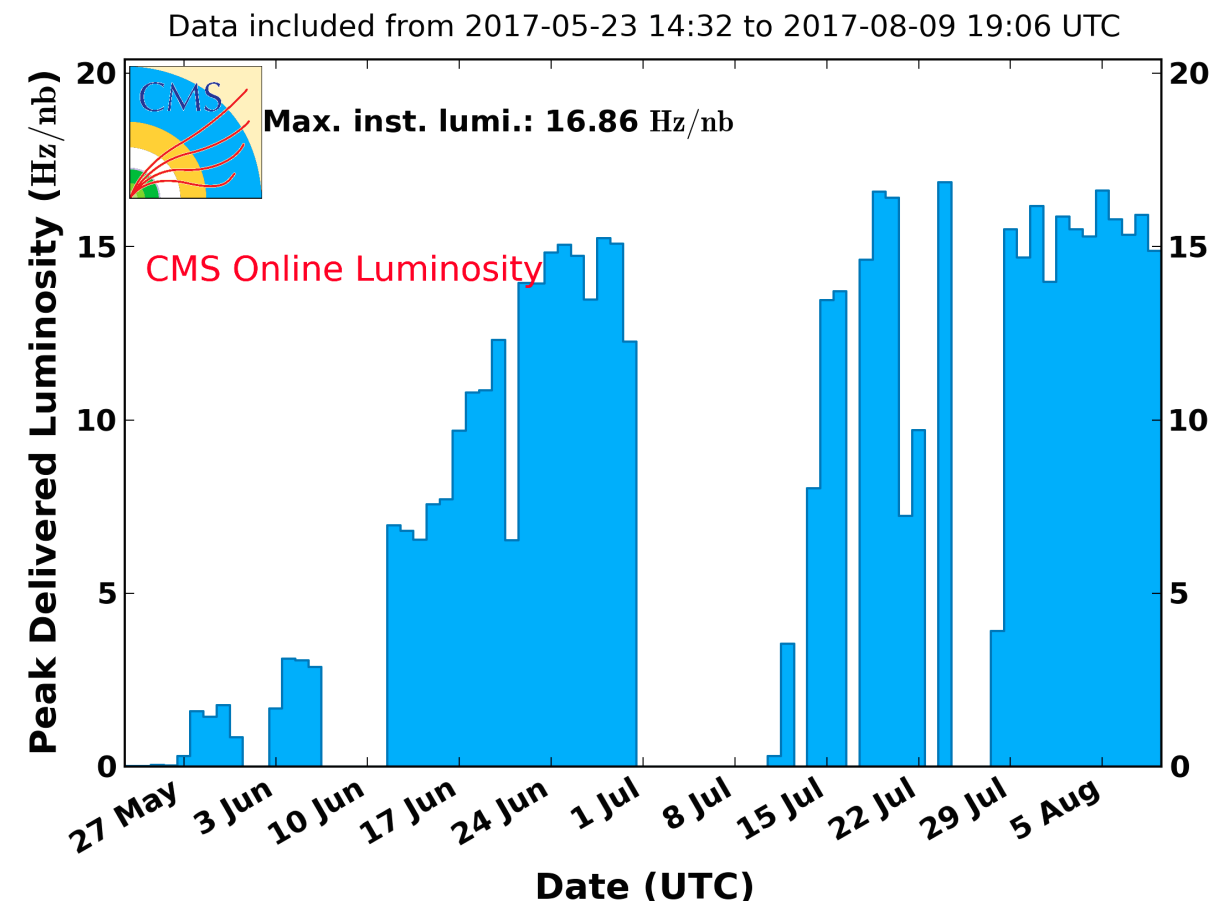
Current Running

- LHC running very well for last week
 - $\sim 3.6 \text{ fb}^{-1}$ delivered to ATLAS/CMS in the last week
 - Peak lumi $\sim 1.75 \times 10^{34}$
 - $\sim 56\%$ time in stable beams
- Successful test done to reduce the crossing angle to $90 \mu\text{rad}$.
 - This brings few % luminosity increase.

CMS Integrated Luminosity, pp, 2017, $\sqrt{s} = 13 \text{ TeV}$



CMS Peak Luminosity Per Day, pp, 2017, $\sqrt{s} = 13 \text{ TeV}$

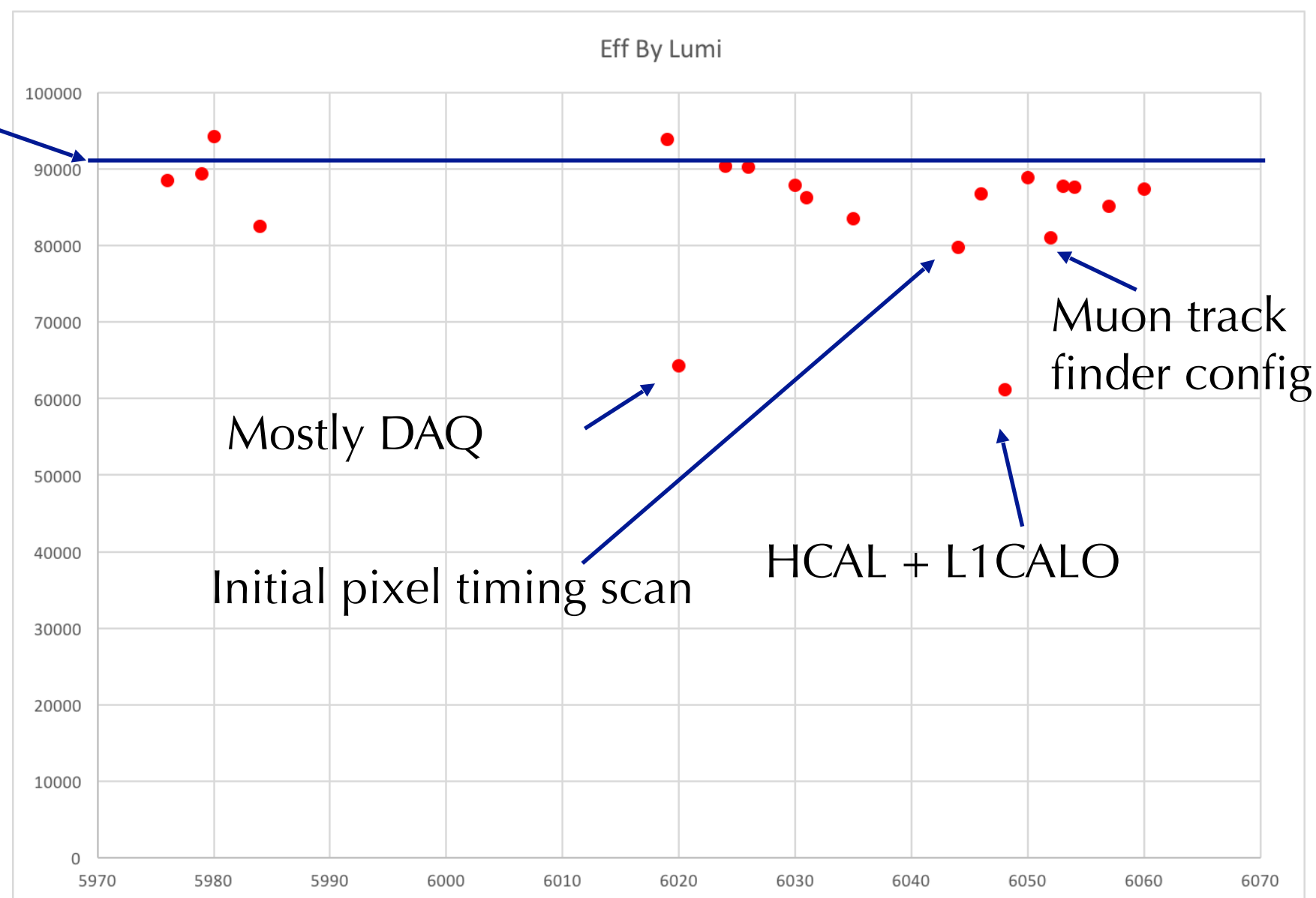


Recorder/delivered efficiency

Main sources of downtime/deadtime:

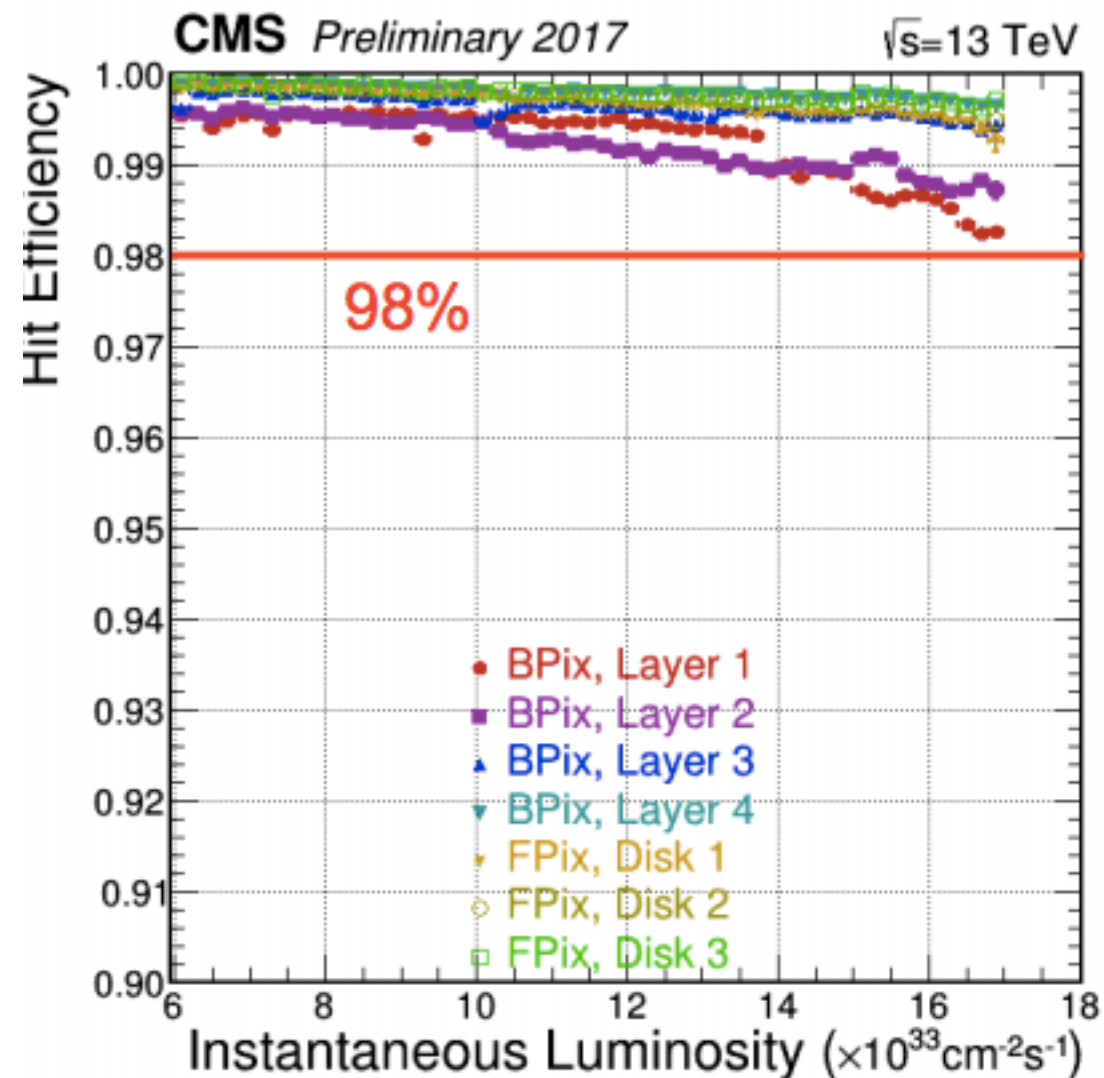
**Average 2016
efficiency 92.4%**

**Average 2017 efficiency
in this period 87%**



CMS Status

- Taking physics data
- All systems performing well
- **ECAL:** smooth running
 - One issue with DAQ configuration for one fill
- **HCAL:** smooth running
 - Deployed updated HE and HF conditions to correct for radiation damage
- **Trigger: Level 1**
 - Menu reached stability
 - Was able to stand the $1.75e34$ luminosity, using the anticipated prescale factors
- **Trigger: HLT**
 - menu is ready, fine tuning physics menu

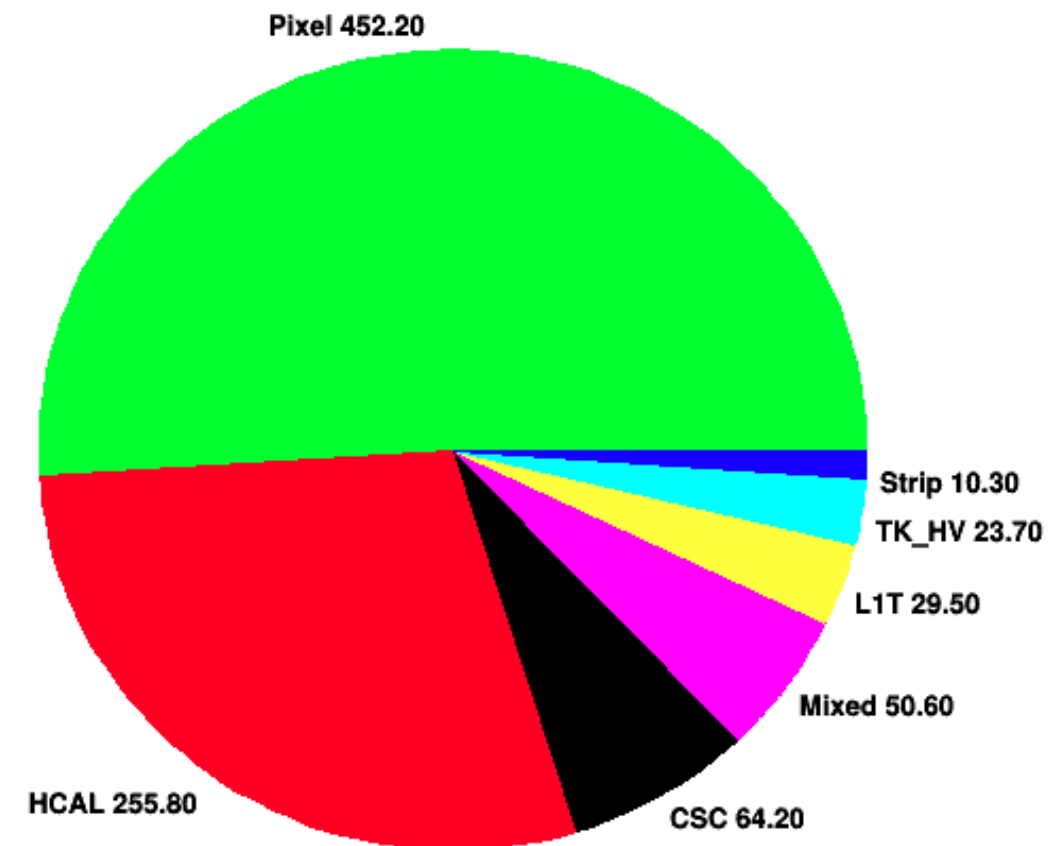


- **Pixels** Configuration is stable
 - Satisfactory timing achieved for Layer 1 and also Layer 2
 - The timing is chosen to favor the Layer 1 performance.
- Now focus on improving the handling of misbehaving channels

Data certification

- Runs from June 16th to July 24th
 - Certification efficiency **86.8%**
 - To be compared to **2016 average 95%**
- Dominated by pixels, while CMS is commissioning the **newly installed pixel detector**
 - may be partially recoverable with re-reco
- The large HCAL downtime is now solved
 - LV power supplies have been replaced
- Data quality is ramping up while commissioning of new components is being finalized
 - We expect to get the data taking efficiency again up above 90%

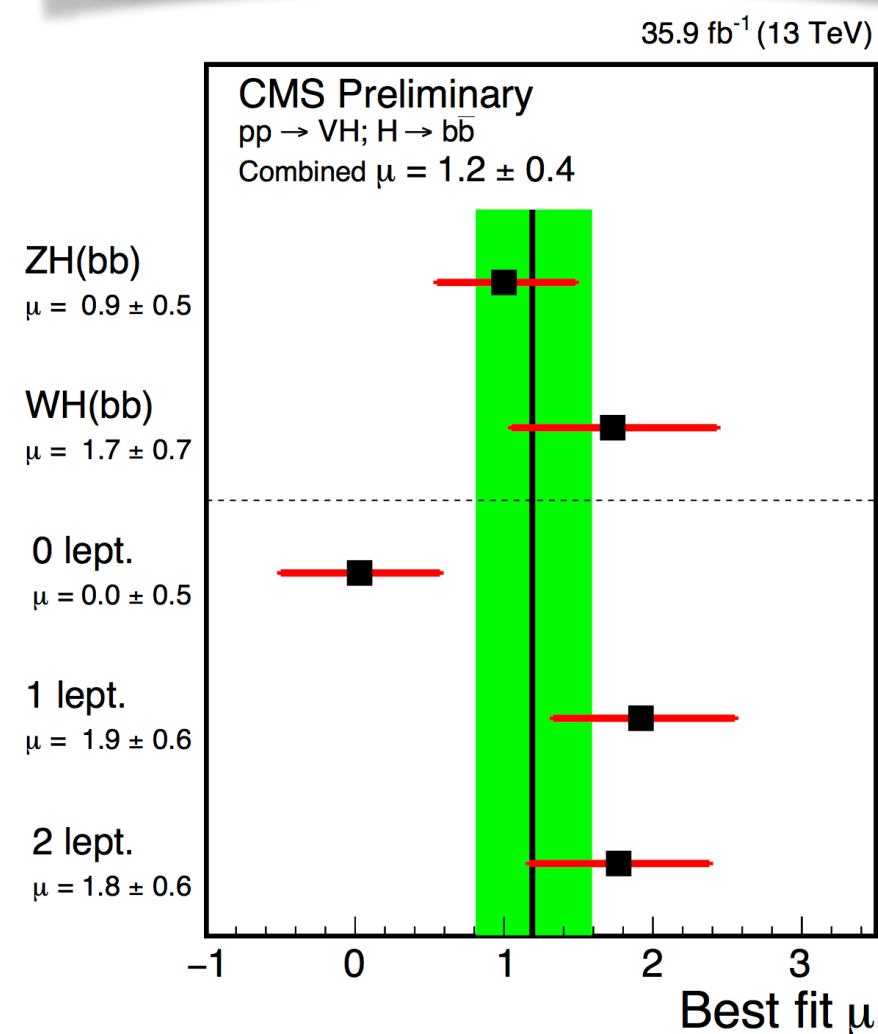
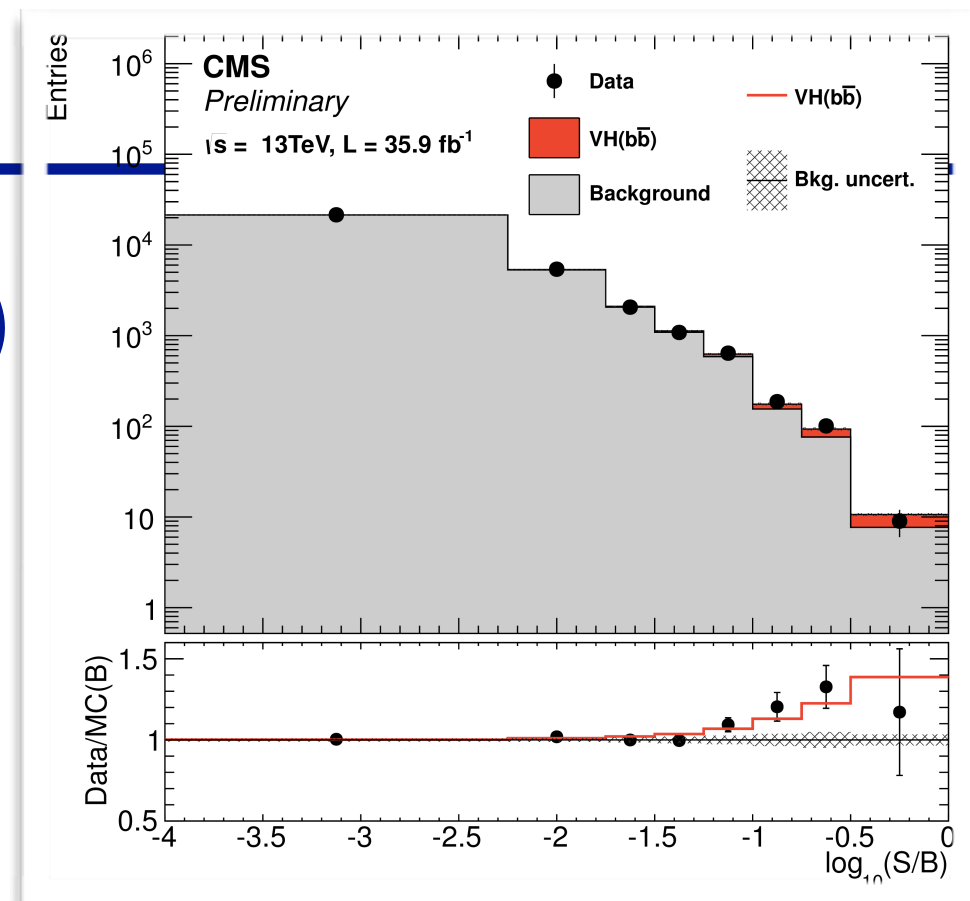
Exclusive Luminosity Losses in /pb



Physics: Evidence for H(bb)



- Evidence for the decay of the Higgs Boson to Bottom Quarks (**HIG-16-044**)
 - with the 2016 data.
- The significance of this excess is **3.3 standard deviations**.
- The signal strength (μ) relative to the SM production is **$\mu=1.2 \pm 0.4$**
- This result is **combined with the Run1** result provides signal significance of **3.8 standard deviations** (3.8 expected)
 - $\mu=1.06 \pm 0.31$.



Conclusions

- CMS is engaged on multiple fronts:
 - Preparing for **legacy re-reconstruction** of **2016** data (36 fb⁻¹)
 - Preparing larger MC campaign for 2017
 - Finalizing the commissioning of the detectors and data reconstruction for 2017
- **Phase 2 upgrade** TDRs are being finalized



All info from CADI and from our publication page:
<http://cern.ch/cms-results/public-results/publications/>