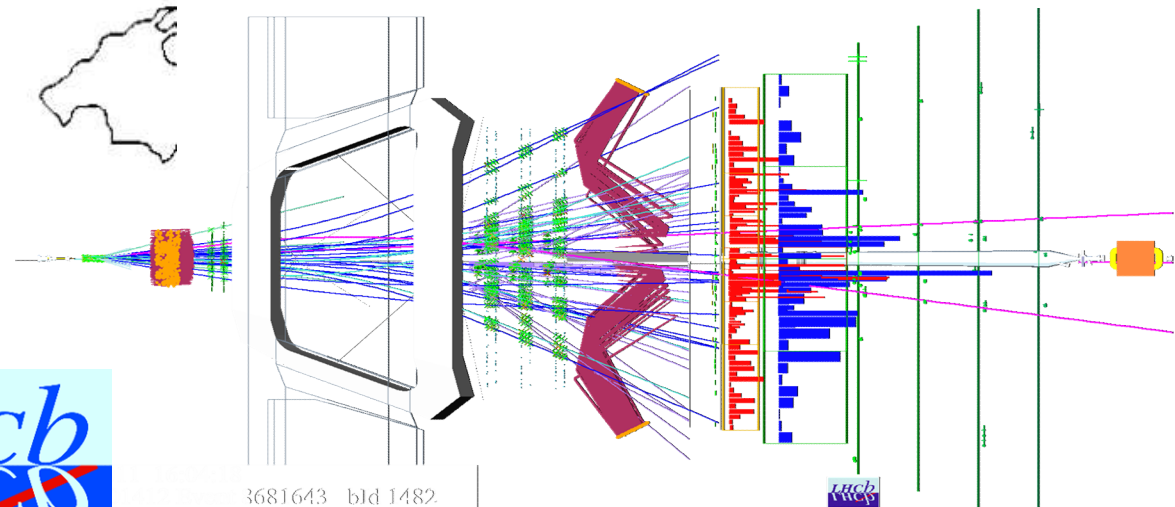


4th RED LHC Workshop,
November 2020

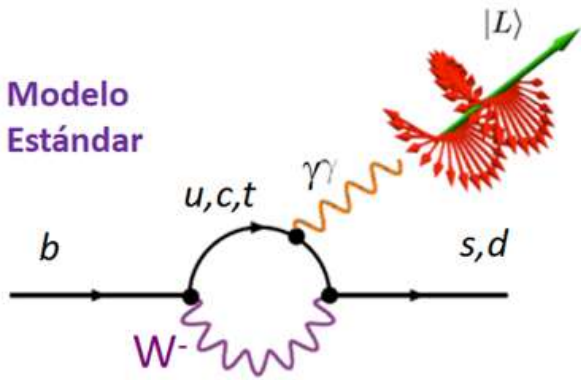
Plans of LHCb (levante groups) for LHCb Run3 and HL-LHC



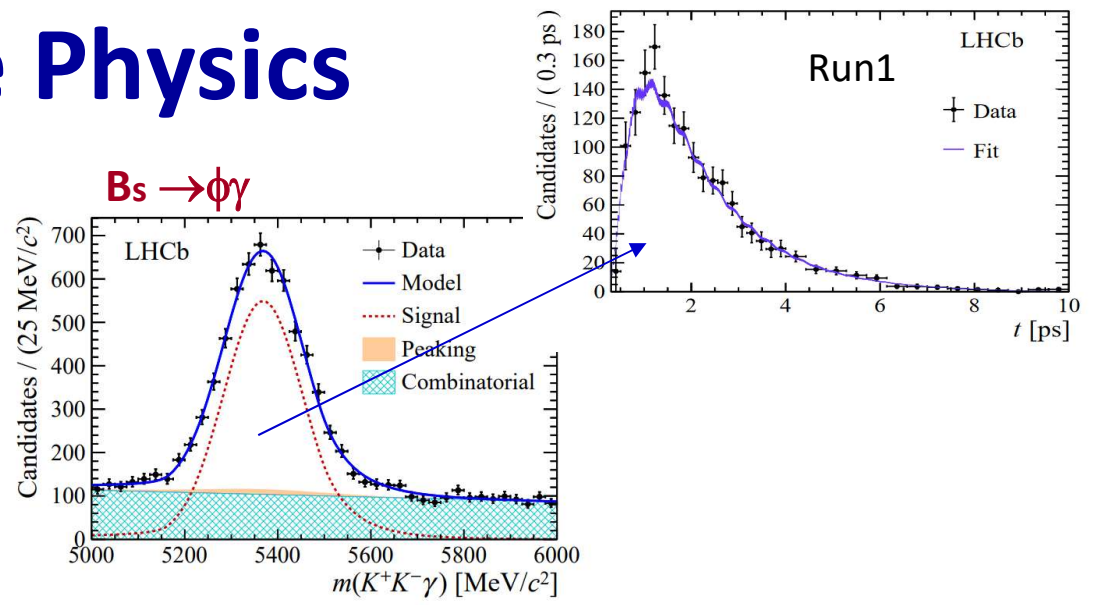
Arantza Oyanguren (IFIC-Valencia)

The Physics

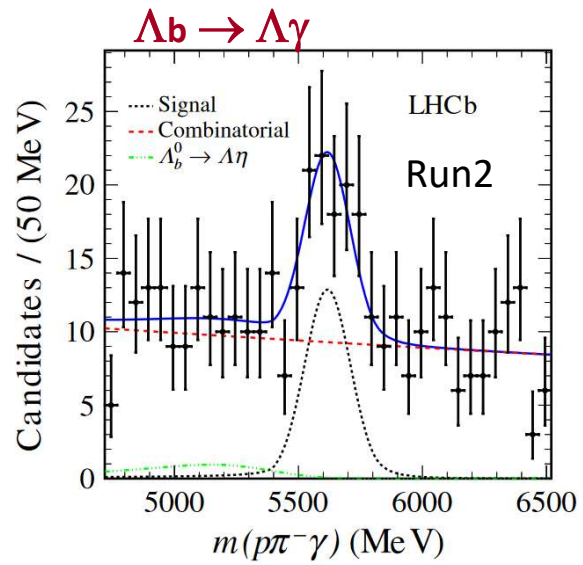
- Rare radiative decays:



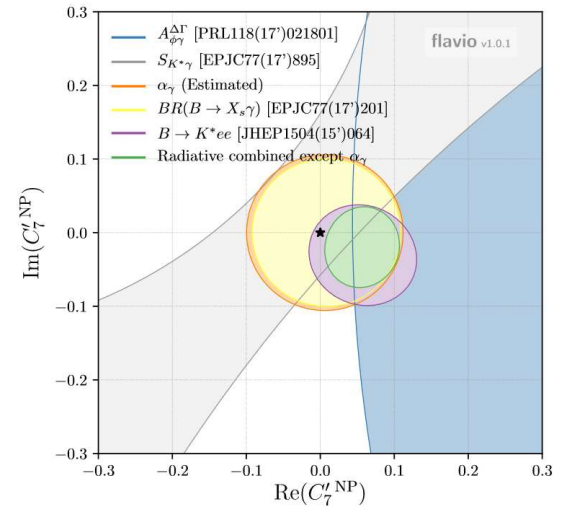
$$\mathcal{H}_{\text{eff}} \sim \underbrace{(C_7 O_7)}_{\text{left}} + \cancel{\underbrace{(C_7' O_7')}_{\text{right}}}$$



Phys. Rev. Lett. 123, 081802 (2019)



Phys. Rev. Lett. 123 (2019) 031801

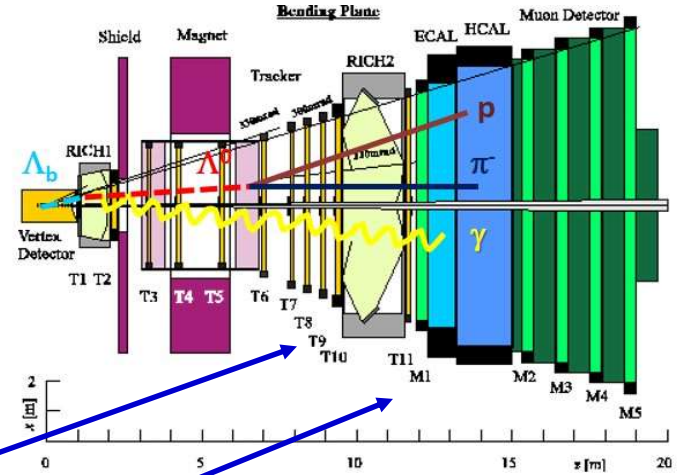
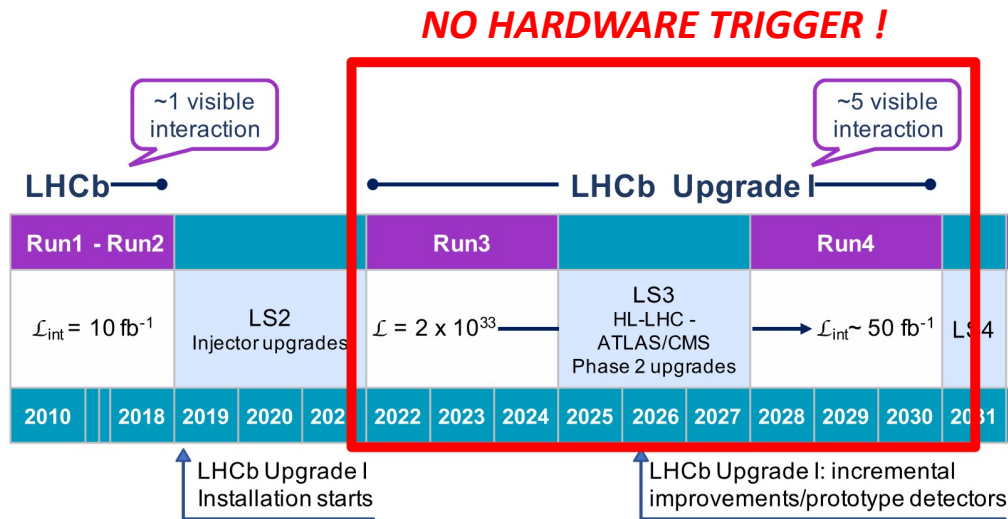


Eur.Phys.J.C 79 (2019) 7, 634

Extended program for Run3:
 $B \rightarrow K^* \gamma$, $B_s \rightarrow \phi \gamma$,
 b-baryons (Λ_b , Ξ_b , Ω_b),
 etc..
 (Searches, BRs, CP, angular and time Observables, ...)

The Detector

- Calorimeter and Forward tracker (SciFi):

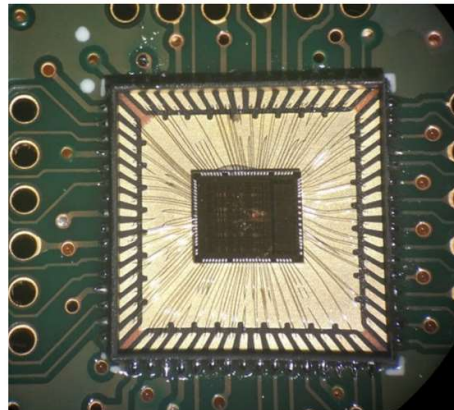
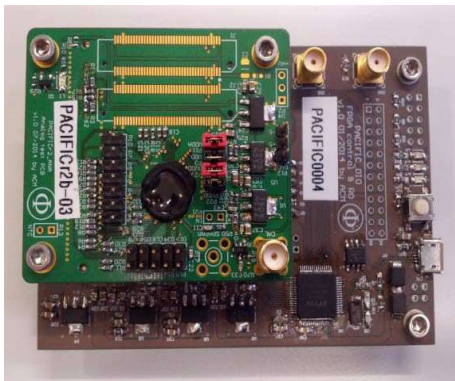


FE Electronics

PACIFIC readout chip for SciFi Tracker.

ICECAL for ECAL and HCAL.

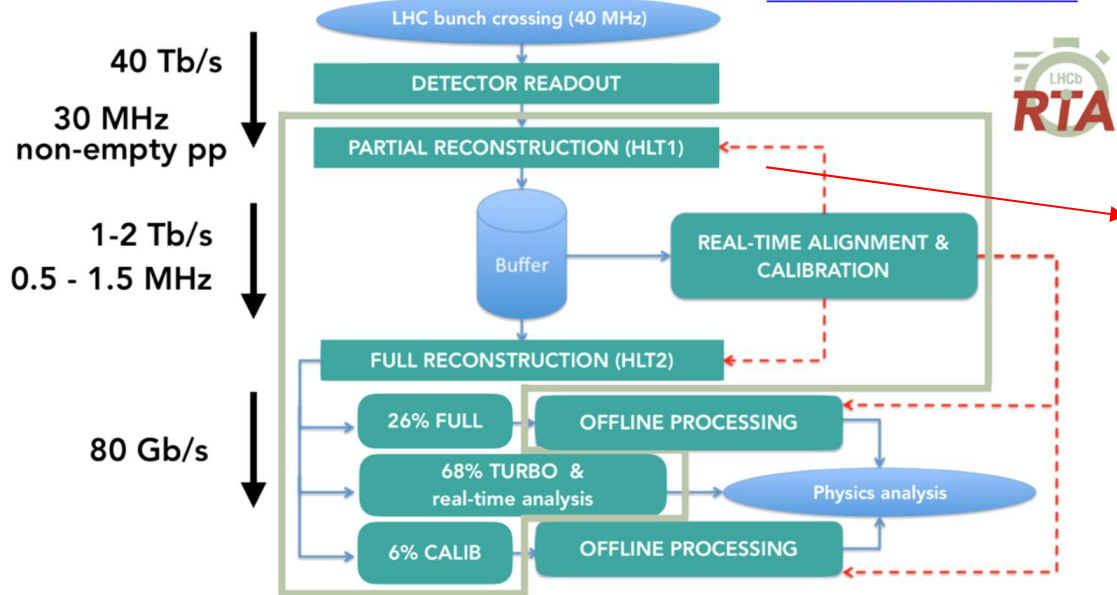
QA, assembly of both detectors and controls and monitoring of calorimeters.



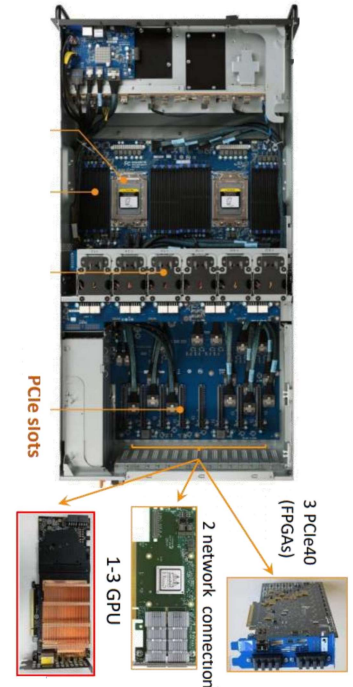
The Trigger (RTA)

- Reconstruct and trigger photons and tracks from long lived particles

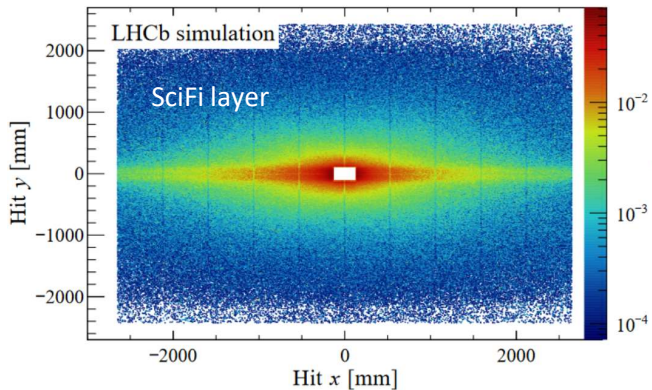
CERN-LHCC-2018-007



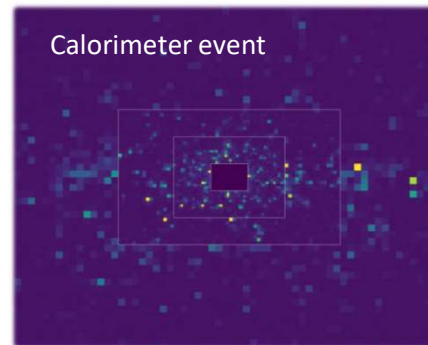
**NEW @ LHCb:
FULL HLT1 ON
GPUs**



Reconstruction techniques



[arXiv:2007.02591](https://arxiv.org/abs/2007.02591)

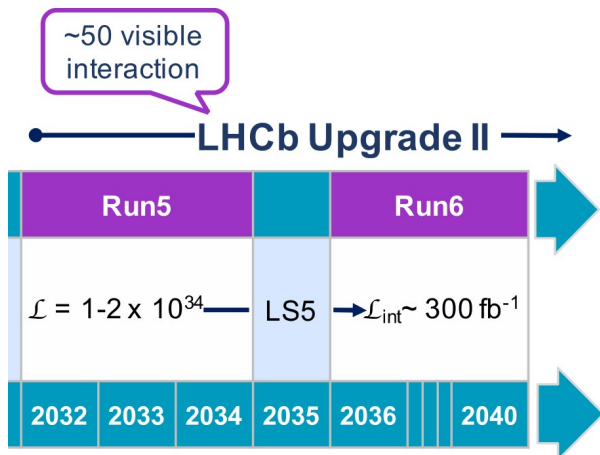


Comput Softw Big Sci 4, 7 (2020)

For Run3 and beyond.
(Interest also in object reconstruction with FPGAs)

The (late) HL-LHC

- **New detectors:**

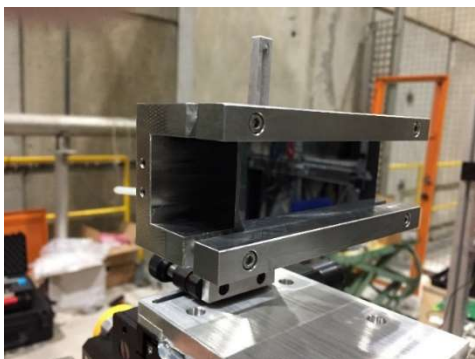


SPAggetti CALorimeter (SPACAL)

FE design and characterization of photosensors



DIPOLE-b project.

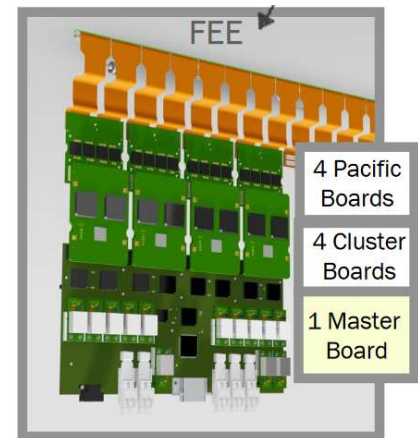


Fixed target experiment to measure EDMs and MDMs

Phys. Rev. Lett. 123, 011801 (2019),
arXiv:2010.11902

Mighty tracker

Characterization of HVCMOS DMAP sensors



(Also working in a FastIC FE chip as possibility for RICH (U1b) and TORCH (U2))