

ATLAS @ LHC Run II: new energies, new hardware capabilities



LHC ramp up to 13 TeV

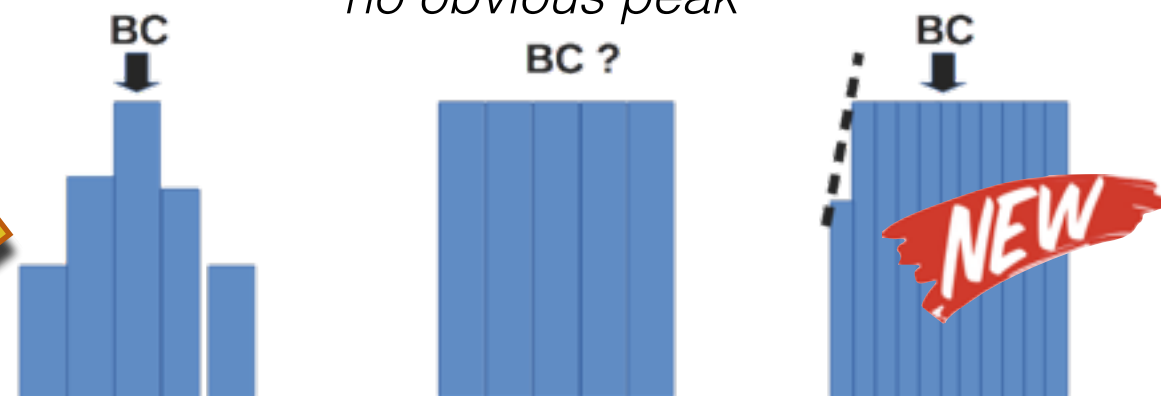
-> more highly saturated pulses in Run II, but also...

NEW new hardware in calorimeter trigger - **80 MHz sampling rate!** Now can use a triggering algorithm with **higher energy reach**.

non-sat. pulse:
obvious peak

40 MHz sat. pulse:
no obvious peak

80 MHz sat. pulse:
can extrapolate peak.



How to commission a Saturated Algorithm

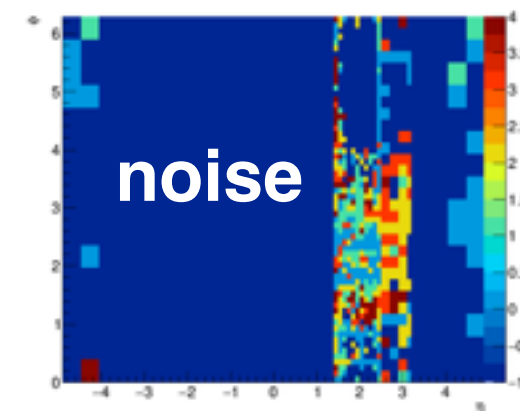
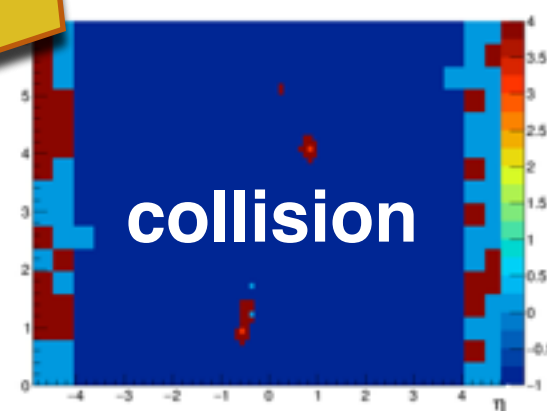
- * **grab opportunities**, take special 80 MHz physics data **no matter what**
- * **understand 80 MHz pulses**
- * **derive algorithm parameters**
- * **run algorithm** in real collisions in spy mode



Checks

* **correct triggering?**

* **failures = noise event?**



Results

(previous: mistrigger rate 1 evt/1fb-1)
since Sat80 activation (3 weeks):



Triggering on Saturated Signals in ATLAS