



# Anomaly Detection

- HL-LHC: move to “real-time” analysis, discarding raw data (e.g. LHCb Upgrade Turbo)
- Fast reaction to anomalies needed
  - misalignment/changes in calibration constants, hardware misconfiguration, faults or outages in the DAQ, etc.
- **Automatic anomaly detection work in infancy**

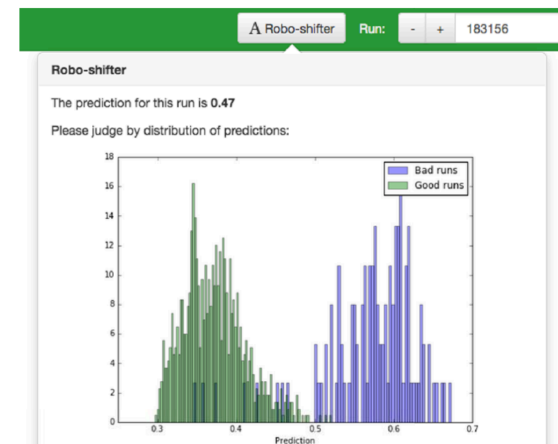
– e.g.

LHCb Roboshifter

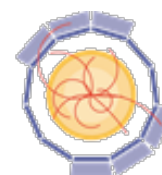
Deep Learning for CMS data quality

Machine Learning in ATLAS TDAQ

Network Monitoring System



Possible future AIDA topic ?



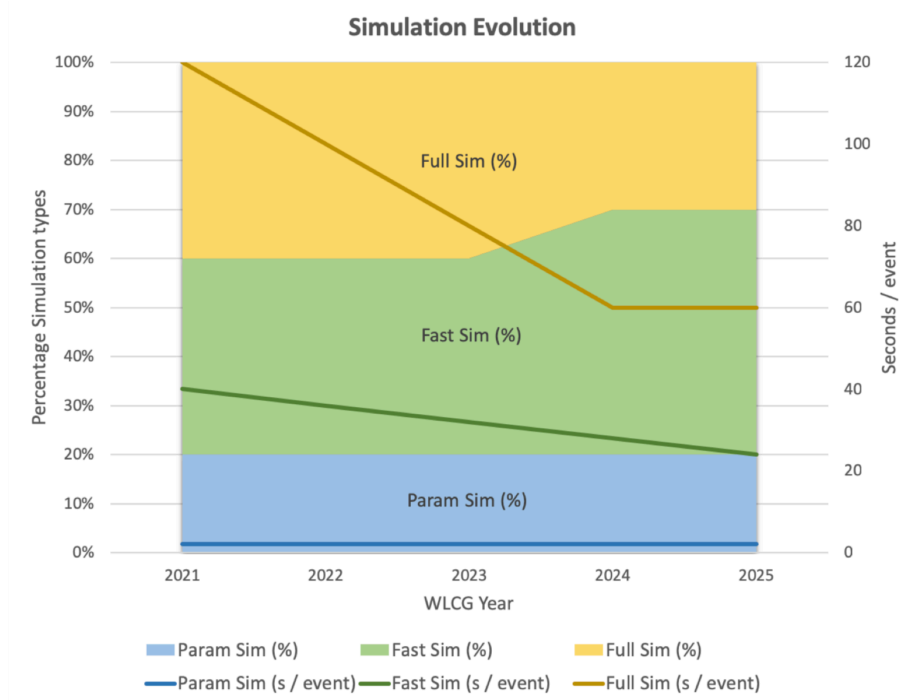
AIDA<sup>2020</sup>



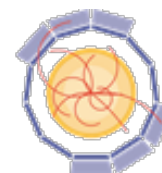
# Fast(er) simulation

- HL-LHC: greater precision relies on greater accuracy of simulation
- Requires all of
  - Speeding up full simulation
  - Introduction of fast simulation solutions
  - Parametric simulation
- **Examples**
  - [Delphes](#)
  - [ReDecay](#)
  - [Gaussino](#)
  - [ATLAS Fast Chain](#)
  - [CMS Fast Simulation](#)

## [LHCb computing Model TDR](#)



Possible future AIDA topic ?



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