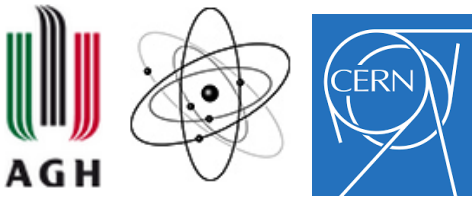

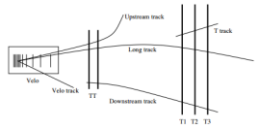

Automatised data quality monitoring of the LHCb Vertex Locator

Marco Gersabeck, Andrew Crocombe, Lennaert Bel, Alex Pearce, Tomasz Szumlak

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Highlights

- LHCb VELO (VErtex LOcator) is a sophisticated device responsible for precise track reconstruction around the crossing point of proton beams
- Critical for the primary and secondary vertex reconstruction and the impact parameter resolution performance
- Each channel is individually read out and then processed by dedicated electronics boards that requires around one million calibration constants
- **Monitoring and control of such involved system is not trivial!**

- In order to efficiently cope with it on daily basis a major re-design of the VELO monitoring system, comparing to Run I, has been done
- The full chain of data processing and analysis is triggered automatically when fresh data arrives (data driven system)
- A dedicated analysis module reduces the data by calculating appropriate statistical measures that are subsequently used in long-term trending plots
- It is also possible to calculate a single metric that represent the condition of the whole detector – this flag may be used to detect specific problems