The Hybrid Seeding at LHCb

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Connecting the dots , 20/04/2020

Summary

- Hybrid seeding: stand-alone reconstruction algorithm of the forward tracker (SciFi) of LHCb → needs to runs inside the HLT2 trigger (total throughput needed ~ kHz/node).

- Iterative search with increasing momentum windows and environment cleanup.
  - Each iteration also covers for hit (in)efficiency and goes in two phases:
    - XZ track search → doublet search, triplet extension, further search along parabola.
    - Y hit addition → rejects ghosts, uses binned Hough cluster approach.

- High efficiency, at the cost of < 5% of total HLT2 budget.