**LHCb Trigger**

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on behalf of the LHCb Collaboration

**Level-1 decision unit**

- Muon chambers
- Calorimeters
- Vertex Locator (Si small r-φ strips)
- Outer Trackers (straw chambers)
- Inner Trackers (Si and Triple GEM)
- RICH 1 (Aerogel + C_4F_{10} + HPD)
- RICH 2 (CF_4 + HPD)
- Calorimeter System
- Preshower (Scintillator/Pb/Scintillator)
- E Cal (Pb Scintillator Shashlik)
- H Cal (Fe Scintillator tiles)
- Muon System (RPC and MWPC)

**Simulations of minimum bias and b events**

Use PYTHIA with multiple parton-parton interactions model tuned on charged track multiplicities observed at low energy hadron colliders (SPS, Tevatron) in non single-diffractive events: predictions at LHC for charged tracks in LHCb acceptance

**Summary of trigger performance**

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**Special features**

- Reduction balanced between several levels → robustness and flexibility
- Single high-P_T lepton, \( \gamma \), and hadron candidates at level 0
- Vertex trigger at level 1 → good efficiency for both leptonic and hadronic B decay channels

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