

Triggers for di-higgs production in ATLAS

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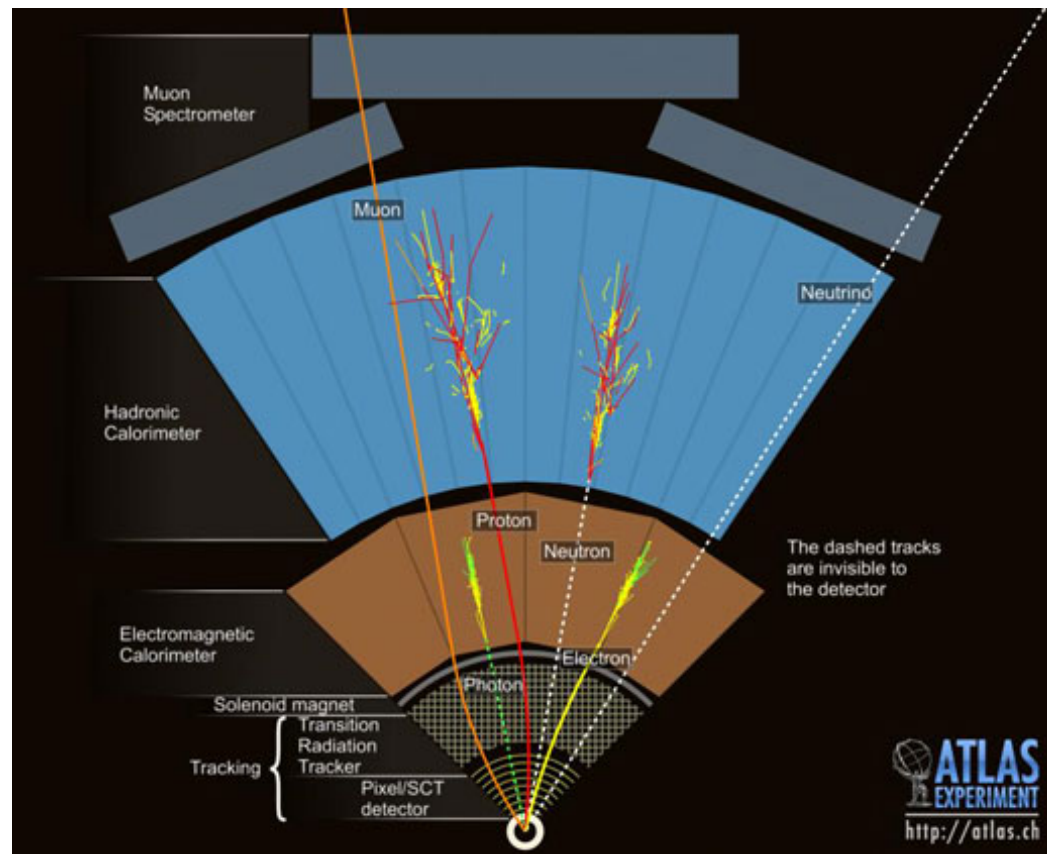
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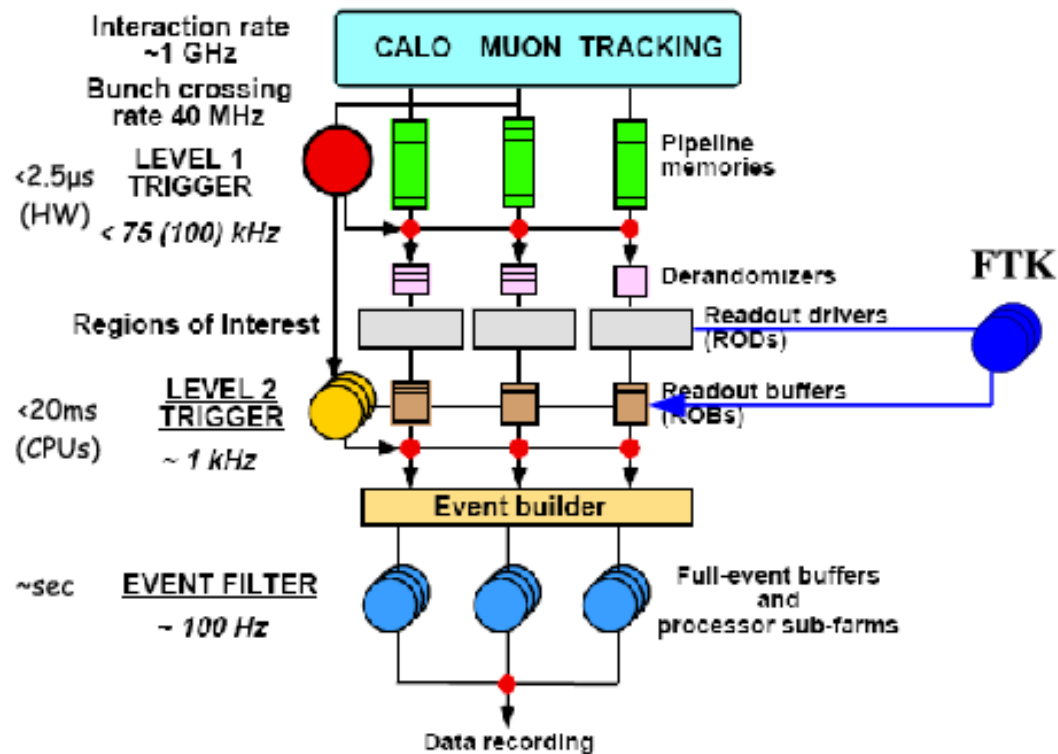


ATLAS Detector

- General detector!



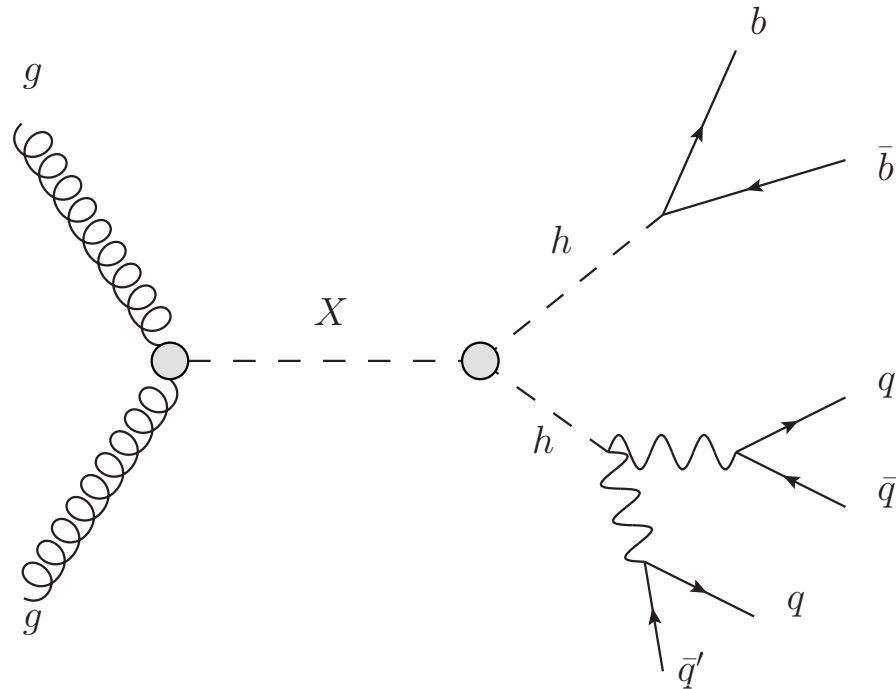
What is a trigger?



- Distinguish between interesting and uninteresting
- Example: 1 jet with transverse momentum > 100 GeV
- Standardized

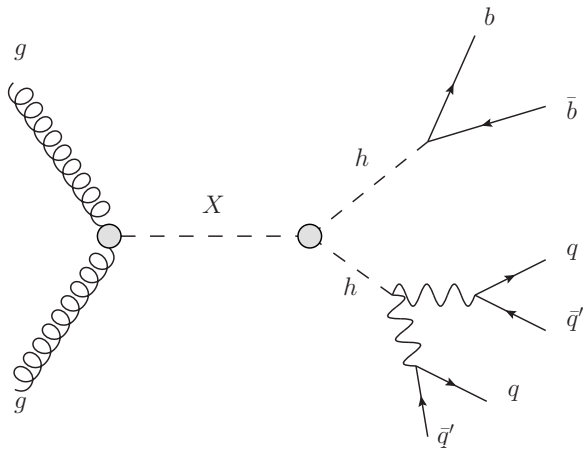
Di-higgs Production

- Fully-hadronic channel



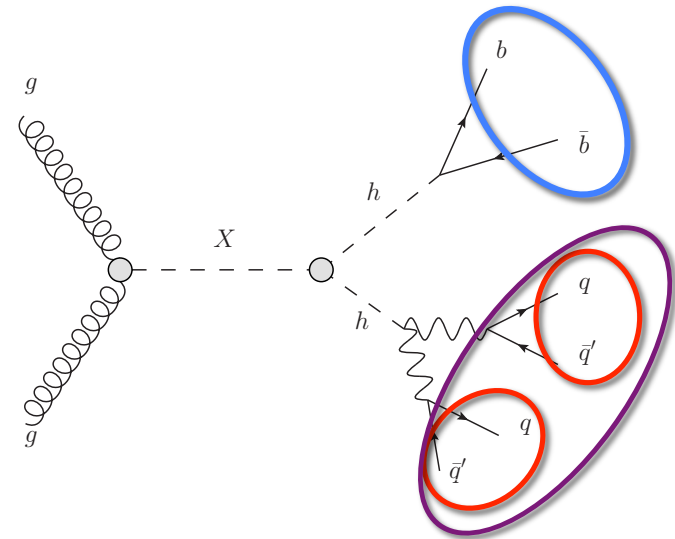
Different topologies

Resolved



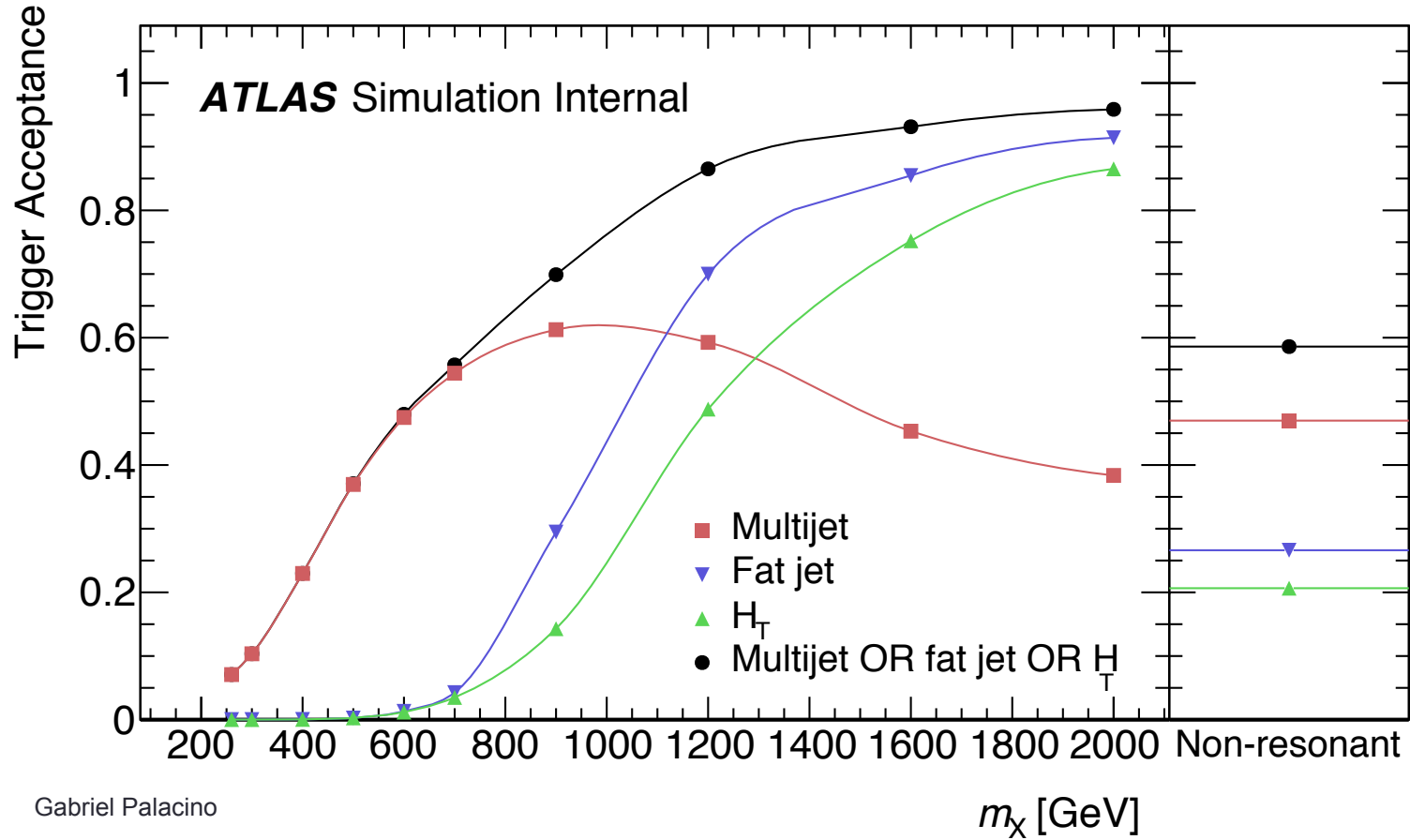
- 2 b-jets from h decay
- 4 light jets from W decays

Boosted

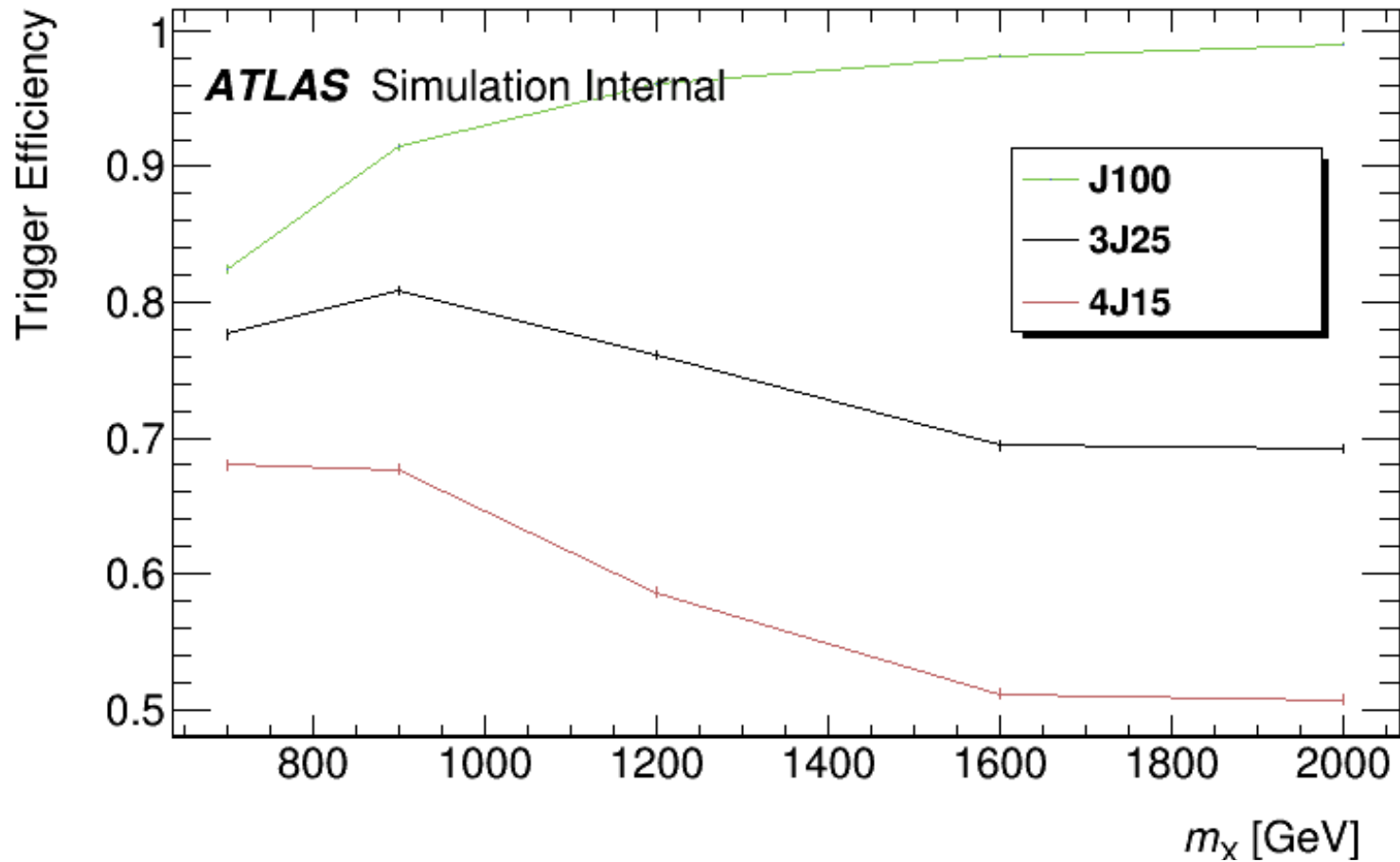


- 1 fat jet containing 2 b-jets
- 1 or 2 jets from W decays

Current Status



L1 Trigger Efficiencies



Future work

- Simulate known trigger to evaluate error
- Build useful trigger for di-Higgs production
- Skills learned: C++ and ROOT