Software Review: Update

10 June 2022

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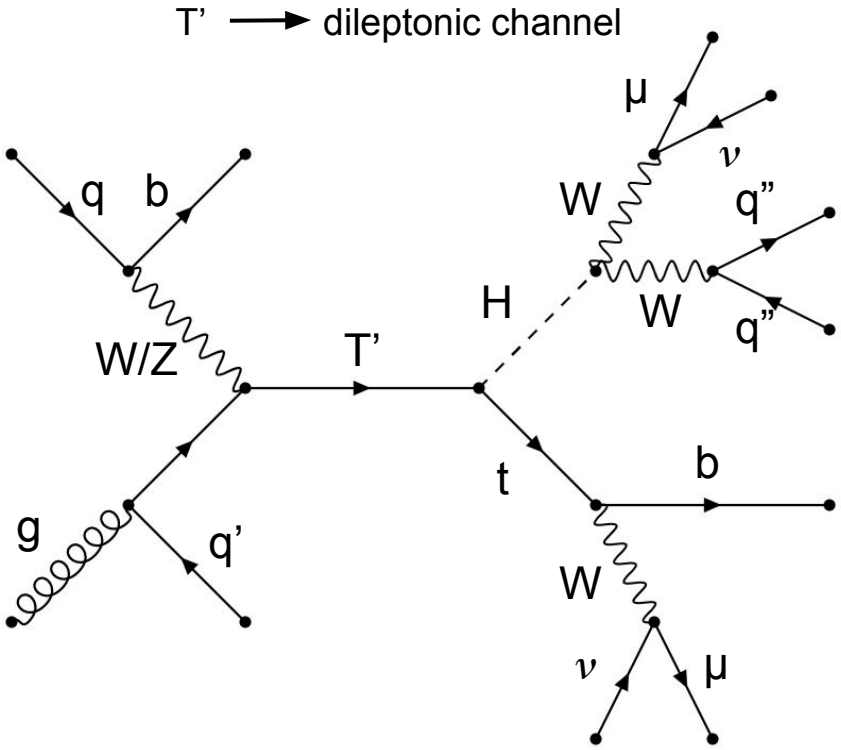

Basic selection: 2 tight SS Muons with Pt > 20 GeV, |η| < 2.4 and tight isolation.

Matching to the Gen information:

2 muons coming from W.

2 W coming from Higgs and 1 W coming from top.

⟶ The goal is to check if the events which passed the selection are consistent with the events which passed the selection + the Gen matching.

Reminder (selection strategies):

Strategy 1: Cut 1: Pt of the leading muon > 80 GeV.
Cut 2: Pt of the subleading muon > 40 GeV.
Cut 3: $\Delta R > 1.8$.
Cut 4: at least one b-jet (b-tag loose).

Strategy 2: Cut 1: Pt of the sum of the two muons > 160 GeV.
Cut 2: $\Delta R > 1.8$.
Cut 3: at least one b-jet (b-tag loose).

Strategy 1:

Selection	Percentage of correct identification
Basic selection	55.4%
Cut 1: Pt first muon > 80 GeV	58.1%
Cut 2: Pt second muon > 40 GeV	62.4%
Cut 3: ΔR > 1.8	63.4%
Cut 4: At least one b-jet	63.3%

Strategy 2:

Selection	Percentage of correct identification
Basic selection	55.4%
Cut 1: Sum Pt two muons > 160 GeV	60.3%
Cut 2: ΔR > 1.8	61.5%
Cut 3: At least one b-jet	61.3%

⟶ The signal is indeed polluted as I noticed one month ago (~35% from the taus, ~3% from Z and ~2% from quark b).