

# $\tau \rightarrow 3\mu$ trigger efficiencies



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Tau23Mu meeting, CERN  
September 10, 2017

# Introduction

- ⇒ Used MC 2015, Sim09.
- ⇒ TCK: 0x6139160F.
- ⇒ All triggers used in Run2 are considered.
- ⇒ The selection: stripping + trutmaching (no L0 or HLT1 requirements).
- ⇒ Considered IsMuon=2 or 3.

# IsMuon == 3

Name	Eff	Gain wrt. to previous
Hlt2TriMuonTau23MuDecision	0.76236	0.76236
Hlt2SingleMuonLowPTDecision	0.76372	0.00136
Hlt2CharmHadDpToPimPipPipTurbo	0.76444	0.00071
Hlt2SingleMuonDecision	0.76459	0.00015
Hlt2RareCharmD02KPiDecision	0.76474	0.00015
Hlt2LowMultDiMuon	0.76482	0.00008
Hlt2XcMuXForTauB2XcMuDecision	0.76482	0.0

## How to read table

Example: Hlt2CharmHadDpToPimPipPipTurbo, 0.76444, 0.00071

**Eff. of** Hlt2CharmHadDpToPimPipPipTurbo || Hlt2SingleMuonLowPT || Hlt2TriMuonTau23Mu is 0.76444.

**Gain of adding** Hlt2CharmHadDpToPimPipPipTurbo to previous Hlt2SingleMuonLowPT || Hlt2TriMuonTau23Mu is 0.00071.

## IsMuon == 2

Name	Eff	Gain wrt. to previous
Hlt2CharmHadDpToPimPipPipTurbo	0.18769	0.18769
Hlt2SingleMuonD	0.25864	0.07095
Hlt2SingleMuonLowPT	0.27076	0.01212
Hlt2RareCharmD02KPi	0.27431	0.003543
Hlt2CharmHadDspToKpPimPip	0.27738	0.00307
Hlt2CharmHadInclSigc2PiLc2HHXBDT	0.279347	0.00195
Hlt2RareCharmD02MuMu	0.28121	0.00186
Hlt2LowMultDiMuon_PS	0.28279	0.00158
Hlt2TopoMu3Body	0.28400	0.001212
Hlt2PIDKs2PiPiLLTurboCalib	0.284568	0.00055

# Conclusions

- ⇒ For 2 IsMuon we are fucked up with TOS triggers...
- ⇒ We should probably add a trigger line asap!
- ⇒ Or maybe trigger on TIS?

# Backup