

Trigger on  $p_T^{\text{miss}}$  without muons (120 GeV)

$$p_T^{\text{miss}} > 200 \text{ GeV}$$

At most 2 jets with  $p_T > 30 \text{ GeV}$

Leading jet  $p_T > 80 \text{ GeV}$

Leading jet  $|\eta| < 2.4$

*Jet and  $p_T^{\text{miss}}$  selection*

$$|\Delta\phi(\vec{p}_T^{\text{miss}}, \vec{p}_T^{\text{leading jet}})| > 1.5$$

$$|\Delta\phi(\vec{p}_T^{\text{miss}}, \vec{p}_T^{\text{sub-leading jet}})| > 0.75$$

No jets identified with b-tagging algorithm

Pass  $p_T^{\text{miss}}$  cleaning filters

Pass HEM veto

$$|1 - \text{PFMET}/\text{CaloMET}| < 1$$

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At least two identified displaced muons

Muons opposite charge

Vertex  $\chi^2/\text{dof} < 4$  (pick lowest)

*Dimuon selection*

$$\Delta R(\mu\mu) < 0.9$$

3D angle  $\alpha_{\mu\mu} > 2.8 \text{ rad}$  (or  $\cos \alpha > -0.94$ )

$$|\Delta\phi(\vec{p}_T^{\text{miss}}, \vec{p}_T^{\mu\mu})| < 0.5$$

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0 matched muons (+  $\min(d_{xy}^A, d_{xy}^B) > 3 \text{ cm}$ )

*Signal region categorization*

1 matched muons (+  $\min(d_{xy}^A, d_{xy}^B) > 0.02 \text{ cm}$ )

2 matched muons (+  $\min(d_{xy}^A, d_{xy}^B) > 0.02 \text{ cm}$ )

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