

DM-finding and τ_h isolation discriminants

WP	Efficiency		Jet $\rightarrow \tau_h$ misidentification rate	
	$Z/\gamma^* \rightarrow \tau\tau$	$Z'(2.5 \text{ TeV}) \rightarrow \tau\tau$	W+jets	Multijet
Cutoff-based				
Loose	49.0%	58.9%	9.09×10^{-3}	3.86×10^{-3}
Medium	40.8%	50.8%	5.13×10^{-3}	2.06×10^{-3}
Tight	38.1%	48.1%	4.38×10^{-3}	1.75×10^{-3}
MVA-based				
Very loose	55.9%	71.2%	1.29×10^{-2}	6.21×10^{-3}
Loose	50.7%	64.3%	7.38×10^{-3}	3.21×10^{-3}
Medium	39.6%	50.7%	3.32×10^{-3}	1.30×10^{-3}
Tight	27.3%	36.4%	1.56×10^{-3}	4.43×10^{-4}

Discriminant against electrons

WP	Efficiency		$e \rightarrow \tau_h$ misidentification rate
	$Z/\gamma^* \rightarrow \tau\tau$	$Z'(2.5 \text{ TeV}) \rightarrow \tau\tau$	$Z/\gamma^* \rightarrow ee$
Very loose	94.3%	89.6%	2.38×10^{-2}
Loose	90.6%	81.5%	4.43×10^{-3}
Medium	84.8%	73.2%	1.38×10^{-3}
Tight	78.3%	65.1%	6.21×10^{-4}
Very tight	72.1%	60.0%	3.54×10^{-4}

Discriminant against muons

WP	Efficiency		$\mu \rightarrow \tau_h$ misidentification rate
	$Z/\gamma^* \rightarrow \tau\tau$	$Z'(2.5 \text{ TeV}) \rightarrow \tau\tau$	$Z/\gamma^* \rightarrow \mu\mu$
Cutoff-based			
Loose	99.3%	96.4%	1.77×10^{-3}
Tight	99.1%	95.0%	7.74×10^{-4}
MVA-based			
Loose	99.5%	99.4%	5.20×10^{-4}
Medium	99.0%	98.8%	3.67×10^{-4}
Tight	98.0%	97.7%	3.18×10^{-4}