

| Object            | Selection requirement                                            |
|-------------------|------------------------------------------------------------------|
| Muon              | $p_{\text{T}}^{\mu} > 25 \text{ GeV}$                            |
|                   | $ \eta^{\mu}  < 2.1$                                             |
|                   | $ d_z  < 0.2 \text{ cm},  d_{xy}  < 0.045 \text{ cm}$            |
|                   | Relative isolation $I_{\text{rel}}^{\mu} < 0.15$                 |
|                   | Pass medium muon identification                                  |
|                   | $m_{\text{T}}(\mu, p_{\text{T}}^{\text{miss}}) < 30 \text{ GeV}$ |
| $\tau_{\text{h}}$ | $p_{\text{T}}^{\tau} > 20 \text{ GeV}$                           |
|                   | $ \eta^{\tau}  < 2.3$                                            |
|                   | $ d_z  < 0.2 \text{ cm}$                                         |
|                   | HPS decay mode with 1 or 3 prongs                                |
|                   | $D_{\text{jet}}^{\text{v2.1}} > 0.9$                             |
|                   | $D_{\text{e}}^{\text{v2.1}} > 0.168 \text{ (VVLoose)}$           |
|                   | $D_{\mu}^{\text{v2.1}} > 0.875 \text{ (Tight)}$                  |
| Pair              | $\Delta R(\mu, \tau_{\text{h}}) > 0.5$                           |
|                   | Opposite electric charge                                         |