

| Analysis channels                                               | Discriminating variable                                                                             |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| SR-0 $\ell$ -2VTJ and SR-0 $\ell$ -3VTJ                         | $S_T = \sum p_{T, \nu \text{ jet}} + \sum p_{T, \text{jet}}$                                        |
| SR-1 $\ell$ -2VTJ                                               | $m_{JJ\ell\nu} = \sqrt{(p_\ell + p_\nu + p_{\nu \text{ jet},1} + p_{\nu \text{ jet},2})^2}$         |
| SR-2 $\ell$ -OS-1VTJ                                            | $S_T = \sum p_{T, \nu \text{ jet}} + \sum p_{T, \text{jet}} + \sum p_{T, \ell}$                     |
| SR-2 $\ell$ -OS-2VTJ and SR-2 $\ell$ -SS-1VTJ                   | $S_T = \sum p_{T, \nu \text{ jet}} + \sum p_{T, \text{jet}} + \sum p_{T, \ell} + p_T^{\text{miss}}$ |
| SR-1 $\ell$ -1 $\tau_h$ -1VTJ and SR-2 $\ell$ -1 $\tau_h$ -0VTJ | $S_T = \sum p_{T, \ell} + \sum p_{T, \text{jet}} + p_{T, \tau}$ and BDT scores                      |