

| SR | rare | WZ | $X + \gamma$ | $t\bar{t}Z/H$ | $t\bar{t}W$ | non-prompt | exp | obs |
|------------|------------------------------|--------------------------------|-----------------------------|------------------------------|-----------------------------|--------------------------------|---------------------------------|-----|
| OffZ SR 1 | $3.6 \pm 0.3^{+1.9}_{-1.9}$ | $17.8 \pm 0.7^{+5.1}_{-4.9}$ | $1.9 \pm 1.0^{+1.1}_{-1.0}$ | $4.0 \pm 0.1^{+0.8}_{-0.8}$ | $1.9 \pm 0.0^{+0.5}_{-0.5}$ | $39.8 \pm 4.7^{+12.0}_{-12.0}$ | $69.0 \pm 4.9^{+13.5}_{-13.4}$ | 74 |
| OffZ SR 2 | $0.5 \pm 0.1^{+0.3}_{-0.3}$ | $2.3 \pm 0.3^{+0.7}_{-0.6}$ | $0.1 \pm 0.1^{+0.0}_{-0.1}$ | $0.8 \pm 0.0^{+0.2}_{-0.2}$ | $0.5 \pm 0.0^{+0.1}_{-0.1}$ | $5.9 \pm 1.7^{+1.8}_{-1.8}$ | $10.2 \pm 1.7^{+2.0}_{-2.0}$ | 8 |
| OffZ SR 3 | $0.4 \pm 0.1^{+0.2}_{-0.2}$ | $1.6 \pm 0.2^{+0.5}_{-0.5}$ | - | $0.6 \pm 0.0^{+0.1}_{-0.1}$ | $0.2 \pm 0.0^{+0.1}_{-0.1}$ | $3.0 \pm 1.1^{+0.9}_{-0.9}$ | $5.8 \pm 1.1^{+1.1}_{-1.1}$ | 8 |
| OffZ SR 4 | $0.2 \pm 0.0^{+0.1}_{-0.1}$ | $0.8 \pm 0.2^{+0.2}_{-0.2}$ | - | $0.2 \pm 0.0^{+0.0}_{-0.0}$ | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | $0.4 \pm 0.2^{+0.1}_{-0.1}$ | $1.8 \pm 0.3^{+0.3}_{-0.3}$ | 3 |
| OffZ SR 5 | $1.3 \pm 0.1^{+0.7}_{-0.6}$ | $1.3 \pm 0.2^{+0.4}_{-0.4}$ | $0.3 \pm 0.2^{+0.2}_{-0.2}$ | $8.5 \pm 0.1^{+1.7}_{-1.7}$ | $4.8 \pm 0.1^{+1.2}_{-1.2}$ | $50.4 \pm 5.0^{+15.2}_{-15.2}$ | $66.7 \pm 5.0^{+15.4}_{-15.4}$ | 73 |
| OffZ SR 6 | $0.2 \pm 0.0^{+0.1}_{-0.1}$ | $0.3 \pm 0.1^{+0.1}_{-0.1}$ | - | $1.6 \pm 0.0^{+0.3}_{-0.3}$ | $1.2 \pm 0.0^{+0.3}_{-0.3}$ | $3.3 \pm 0.8^{+1.0}_{-1.0}$ | $6.6 \pm 0.8^{+1.2}_{-1.2}$ | 7 |
| OffZ SR 7 | $0.2 \pm 0.0^{+0.1}_{-0.1}$ | $0.2 \pm 0.1^{+0.1}_{-0.1}$ | $0.1 \pm 0.1^{+0.1}_{-0.1}$ | $1.4 \pm 0.0^{+0.3}_{-0.3}$ | $0.6 \pm 0.0^{+0.2}_{-0.2}$ | $3.5 \pm 1.2^{+1.0}_{-1.0}$ | $6.0 \pm 1.2^{+1.1}_{-1.1}$ | 8 |
| OffZ SR 8 | $0.1 \pm 0.0^{+0.1}_{-0.1}$ | $0.2 \pm 0.1^{+0.0}_{-0.0}$ | $0.1 \pm 0.1^{+0.1}_{-0.1}$ | $0.6 \pm 0.0^{+0.1}_{-0.1}$ | $0.4 \pm 0.0^{+0.1}_{-0.1}$ | $0.6 \pm 0.3^{+0.2}_{-0.2}$ | $1.9 \pm 0.3^{+0.3}_{-0.3}$ | 3 |
| OffZ SR 9 | $0.3 \pm 0.0^{+0.2}_{-0.2}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $0.4 \pm 0.2^{+0.2}_{-0.2}$ | $4.7 \pm 0.1^{+1.0}_{-1.0}$ | $2.9 \pm 0.0^{+0.7}_{-0.7}$ | $13.5 \pm 3.2^{+4.1}_{-4.1}$ | $21.8 \pm 3.2^{+4.3}_{-4.3}$ | 23 |
| OffZ SR 10 | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | - | $0.1 \pm 0.1^{+0.1}_{-0.1}$ | $0.8 \pm 0.0^{+0.2}_{-0.2}$ | $0.7 \pm 0.0^{+0.2}_{-0.2}$ | $0.4 \pm 0.2^{+0.1}_{-0.1}$ | $2.0 \pm 0.3^{+0.3}_{-0.3}$ | 1 |
| OffZ SR 11 | $0.1 \pm 0.0^{+0.1}_{-0.1}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $0.1 \pm 0.1^{+0.1}_{-0.1}$ | $0.9 \pm 0.0^{+0.2}_{-0.2}$ | $0.3 \pm 0.0^{+0.1}_{-0.1}$ | $1.5 \pm 1.2^{+0.4}_{-0.4}$ | $3.0 \pm 1.2^{+0.5}_{-0.5}$ | 4 |
| OffZ SR 12 | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | - | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $0.4 \pm 0.0^{+0.1}_{-0.1}$ | $0.2 \pm 0.0^{+0.1}_{-0.1}$ | $0.3 \pm 0.2^{+0.1}_{-0.1}$ | $0.9 \pm 0.2^{+0.1}_{-0.1}$ | 1 |
| OffZ SR 13 | $0.2 \pm 0.0^{+0.1}_{-0.1}$ | - | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $0.6 \pm 0.0^{+0.1}_{-0.1}$ | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | $1.6 \pm 1.0^{+0.5}_{-0.5}$ | $2.6 \pm 1.0^{+0.5}_{-0.5}$ | 1 |
| OffZ SR 14 | $0.9 \pm 0.1^{+0.4}_{-0.5}$ | $1.1 \pm 0.2^{+0.3}_{-0.3}$ | $0.1 \pm 0.1^{+0.1}_{-0.1}$ | $1.9 \pm 0.0^{+0.6}_{-0.6}$ | $0.9 \pm 0.0^{+0.3}_{-0.3}$ | $2.4 \pm 1.1^{+0.7}_{-0.7}$ | $7.2 \pm 1.1^{+1.3}_{-1.2}$ | 12 |
| OffZ SR 15 | $0.3 \pm 0.1^{+0.2}_{-0.2}$ | $0.9 \pm 0.2^{+0.3}_{-0.3}$ | $0.1 \pm 0.1^{+0.0}_{-0.0}$ | $0.5 \pm 0.0^{+0.1}_{-0.1}$ | $0.4 \pm 0.0^{+0.1}_{-0.1}$ | $3.2 \pm 1.5^{+1.0}_{-1.0}$ | $5.5 \pm 1.5^{+1.0}_{-1.1}$ | 6 |
| OnZ SR 1 | $10.7 \pm 0.4^{+5.5}_{-5.5}$ | $77.2 \pm 1.6^{+21.4}_{-21.7}$ | $0.9 \pm 0.7^{+0.5}_{-0.9}$ | $7.8 \pm 0.1^{+1.8}_{-1.8}$ | $0.3 \pm 0.0^{+0.1}_{-0.1}$ | $14.8 \pm 2.9^{+4.5}_{-4.5}$ | $111.8 \pm 3.4^{+23.4}_{-23.8}$ | 110 |
| OnZ SR 2 | $2.2 \pm 0.2^{+1.2}_{-1.2}$ | $15.3 \pm 0.7^{+4.4}_{-4.2}$ | $0.1 \pm 0.1^{+0.0}_{-0.0}$ | $2.2 \pm 0.0^{+0.5}_{-0.5}$ | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | $2.8 \pm 1.6^{+0.9}_{-0.9}$ | $22.7 \pm 1.7^{+4.8}_{-4.7}$ | 24 |
| OnZ SR 3 | $2.1 \pm 0.2^{+1.1}_{-1.1}$ | $12.6 \pm 0.6^{+3.4}_{-3.4}$ | - | $1.5 \pm 0.0^{+0.4}_{-0.4}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $2.2 \pm 0.6^{+0.7}_{-0.7}$ | $18.5 \pm 0.9^{+3.8}_{-3.8}$ | 26 |
| OnZ SR 4 | $0.6 \pm 0.1^{+0.3}_{-0.3}$ | $5.1 \pm 0.4^{+1.4}_{-1.4}$ | - | $0.5 \pm 0.0^{+0.1}_{-0.1}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $1.0 \pm 1.0^{+0.3}_{-0.3}$ | $7.3 \pm 1.1^{+1.5}_{-1.5}$ | 8 |
| OnZ SR 5 | $5.3 \pm 0.2^{+2.7}_{-2.7}$ | $6.5 \pm 0.4^{+1.8}_{-1.8}$ | $0.1 \pm 0.1^{+0.1}_{-0.0}$ | $16.1 \pm 0.1^{+3.5}_{-3.6}$ | $0.8 \pm 0.0^{+0.2}_{-0.2}$ | $9.8 \pm 1.6^{+3.0}_{-3.0}$ | $38.7 \pm 1.7^{+6.2}_{-6.2}$ | 37 |
| OnZ SR 6 | $1.1 \pm 0.1^{+0.6}_{-0.6}$ | $1.2 \pm 0.2^{+0.3}_{-0.4}$ | $0.1 \pm 0.1^{+0.0}_{-0.0}$ | $3.9 \pm 0.0^{+0.9}_{-0.9}$ | $0.3 \pm 0.0^{+0.1}_{-0.1}$ | $0.6 \pm 0.4^{+0.2}_{-0.2}$ | $7.2 \pm 0.4^{+1.3}_{-1.3}$ | 9 |
| OnZ SR 7 | $0.9 \pm 0.1^{+0.5}_{-0.5}$ | $1.5 \pm 0.2^{+0.4}_{-0.4}$ | - | $3.8 \pm 0.0^{+0.9}_{-0.9}$ | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | $0.9 \pm 0.4^{+0.3}_{-0.3}$ | $7.3 \pm 0.5^{+1.2}_{-1.2}$ | 11 |
| OnZ SR 8 | $0.3 \pm 0.0^{+0.1}_{-0.1}$ | $0.6 \pm 0.1^{+0.2}_{-0.2}$ | - | $1.1 \pm 0.0^{+0.3}_{-0.2}$ | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | $0.6 \pm 0.4^{+0.2}_{-0.2}$ | $2.6 \pm 0.4^{+0.4}_{-0.4}$ | 2 |
| OnZ SR 9 | $2.1 \pm 0.1^{+1.1}_{-1.1}$ | $0.5 \pm 0.1^{+0.1}_{-0.1}$ | - | $12.5 \pm 0.1^{+2.8}_{-2.8}$ | $0.7 \pm 0.0^{+0.2}_{-0.2}$ | $2.6 \pm 1.1^{+0.8}_{-0.8}$ | $18.4 \pm 1.2^{+3.3}_{-3.3}$ | 19 |
| OnZ SR 10 | $0.2 \pm 0.0^{+0.1}_{-0.1}$ | $0.2 \pm 0.1^{+0.0}_{-0.0}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $1.8 \pm 0.0^{+0.4}_{-0.4}$ | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | $0.4 \pm 0.3^{+0.1}_{-0.1}$ | $2.8 \pm 0.3^{+0.5}_{-0.5}$ | 3 |
| OnZ SR 11 | $0.4 \pm 0.0^{+0.2}_{-0.2}$ | $0.1 \pm 0.1^{+0.0}_{-0.1}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $2.6 \pm 0.0^{+0.6}_{-0.6}$ | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | $0.4 \pm 0.2^{+0.1}_{-0.1}$ | $3.6 \pm 0.2^{+0.7}_{-0.7}$ | 3 |
| OnZ SR 12 | $0.1 \pm 0.0^{+0.1}_{-0.1}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | - | $0.7 \pm 0.0^{+0.2}_{-0.2}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $0.0 \pm 0.0^{+0.3}_{-0.0}$ | $0.9 \pm 0.0^{+0.2}_{-0.2}$ | 1 |
| OnZ SR 13 | $0.2 \pm 0.0^{+0.1}_{-0.1}$ | $0.1 \pm 0.1^{+0.0}_{-0.0}$ | - | $1.5 \pm 0.0^{+0.4}_{-0.4}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $0.2 \pm 0.1^{+0.0}_{-0.0}$ | $2.0 \pm 0.1^{+0.4}_{-0.4}$ | 1 |
| OnZ SR 14a | $1.9 \pm 0.1^{+1.0}_{-1.0}$ | $5.9 \pm 0.4^{+1.6}_{-1.6}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $2.7 \pm 0.0^{+1.8}_{-1.8}$ | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | $2.0 \pm 1.3^{+0.6}_{-0.6}$ | $12.6 \pm 1.4^{+2.8}_{-2.8}$ | 12 |
| OnZ SR 14b | $0.8 \pm 0.1^{+0.4}_{-0.4}$ | $3.4 \pm 0.3^{+1.0}_{-1.0}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $1.2 \pm 0.0^{+0.8}_{-0.8}$ | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | $1.1 \pm 1.0^{+0.3}_{-0.3}$ | $6.7 \pm 1.1^{+1.5}_{-1.5}$ | 5 |
| OnZ SR 15a | $0.4 \pm 0.1^{+0.2}_{-0.2}$ | $1.3 \pm 0.2^{+0.4}_{-0.4}$ | - | $0.5 \pm 0.0^{+0.1}_{-0.1}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $0.0 \pm 0.0^{+0.3}_{-0.0}$ | $2.2 \pm 0.2^{+0.5}_{-0.5}$ | 5 |
| OnZ SR 15b | $0.6 \pm 0.1^{+0.3}_{-0.3}$ | $3.7 \pm 0.3^{+1.0}_{-1.0}$ | $0.0 \pm 0.0^{+0.0}_{-0.0}$ | $0.6 \pm 0.0^{+0.3}_{-0.3}$ | $0.1 \pm 0.0^{+0.0}_{-0.0}$ | $0.0 \pm 0.0^{+0.3}_{-0.0}$ | $5.1 \pm 0.4^{+1.2}_{-1.2}$ | 7 |