

| Process                       | Sequential Cut    |                |                |                | Random Forest          |                |
|-------------------------------|-------------------|----------------|----------------|----------------|------------------------|----------------|
|                               | 0-jet             | DF             | 0-jet          | SF             | DF                     | SF             |
|                               |                   | 1-jet          |                | 1-jet          | all jet multiplicities |                |
| Top quark                     | $2114 \pm 111$    | $5002 \pm 121$ | $1202 \pm 66$  | $2211 \pm 69$  | $3453 \pm 343$         | $830 \pm 82$   |
| Drell-Yan                     | $129 \pm 10$      | $498 \pm 38$   | $1230 \pm 262$ | $285 \pm 86$   | $1360 \pm 128$         | $692 \pm 72$   |
| VZ                            | $227 \pm 13$      | $270 \pm 12$   | $192 \pm 12$   | $110 \pm 7$    | $279 \pm 29$           | $139 \pm 10$   |
| VVV                           | $11 \pm 1$        | $29 \pm 2$     | $4 \pm 1$      | $6 \pm 1$      | $13 \pm 4$             | $3 \pm 2$      |
| $H \rightarrow W^+W^-$        | $269 \pm 41$      | $150 \pm 25$   | $50 \pm 2$     | $27 \pm 1$     | $241 \pm 26$           | $90 \pm 10$    |
| $W\gamma^{(*)}$               | $147 \pm 17$      | $136 \pm 13$   | $123 \pm 15$   | $58 \pm 6$     | $305 \pm 88$           | $20 \pm 6$     |
| Nonprompt leptons             | $976 \pm 227$     | $550 \pm 125$  | $153 \pm 39$   | $127 \pm 32$   | $945 \pm 298$          | $183 \pm 59$   |
| Total background              | $3873 \pm 257$    | $6635 \pm 180$ | $2954 \pm 274$ | $2824 \pm 115$ |                        |                |
|                               | $10\,508 \pm 314$ |                | $5778 \pm 297$ |                | $6596 \pm 482$         | $1957 \pm 125$ |
| $q\bar{q} \rightarrow W^+W^-$ | $6432 \pm 250$    | $2532 \pm 145$ | $2501 \pm 185$ | $1018 \pm 71$  | $12\,073 \pm 773$      | $2825 \pm 182$ |
| $gg \rightarrow W^+W^-$       | $521 \pm 66$      | $291 \pm 38$   | $228 \pm 32$   | $117 \pm 15$   | $693 \pm 44$           | $276 \pm 17$   |
| Total $W^+W^-$                | $6953 \pm 259$    | $2823 \pm 150$ | $2729 \pm 188$ | $1136 \pm 72$  |                        |                |
|                               | $9776 \pm 299$    |                | $3865 \pm 202$ |                | $12\,767 \pm 818$      | $3101 \pm 200$ |
| Total yield                   | $10\,825 \pm 365$ | $9458 \pm 235$ | $5683 \pm 332$ | $3960 \pm 359$ |                        |                |
|                               | $20\,283 \pm 434$ |                | $9642 \pm 359$ |                | $19\,363 \pm 949$      | $5058 \pm 236$ |
| Purity                        | 0.64              | 0.30           | 0.48           | 0.29           |                        |                |
|                               |                   | 0.48           |                | 0.40           | 0.66                   | 0.61           |
| Observed                      | 10 866            | 9404           | 5690           | 3914           | 19 418                 | 5210           |