

χ^2 table. Blue color text represents a value that is lower than the SM χ^2 by more than one standard deviation of the χ^2 distribution. Similarly, red color text represents values that are higher than the SM χ^2 by more than one standard deviation. In parenthesis is the total SM χ^2 for the dataset included in the fit.

| | | SM | LHC_NLO_LIN_GLOB |
|-----------------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_ttbb_13TeV_2016 | 1 | 0.906 | 0.805 |
| ATLAS_tttt_13TeV_run2 | 1 | 2.352 | 2.441 |
| ATLAS_tttt_13TeV_slep_inc | 1 | 0.701 | 0.720 |
| CMS_ttbb_13TeV | 1 | 4.959 | 5.503 |
| CMS_ttbb_13TeV_2016 | 1 | 1.754 | 2.162 |
| CMS_ttbb_13TeV_dilepton_inc | 1 | 0.962 | 0.677 |
| CMS_ttbb_13TeV_ljets_inc | 1 | 0.9 | 0.536 |
| CMS_tttt_13TeV | 1 | 0.055 | 0.062 |
| CMS_tttt_13TeV_run2 | 1 | 0.051 | 0.036 |
| CMS_tttt_13TeV_slep_inc | 1 | 0.204 | 0.209 |
| Total | | | 1.315 (1.284) |

Table 1: χ^2 table for 4H data

| | | SM | LHC_NLO_LIN_GLOB |
|-------------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_CMS_tt_AC_8TeV | 6 | 0.861 | 0.835 |
| ATLAS_tt_13TeV_asy_2022 | 5 | 1.011 | 0.708 |
| CMS_tt_13TeV_asy | 3 | 1.01 | 0.770 |
| Total | | | 0.776 (0.947) |

Table 2: χ^2 table for AC data

| | | SM | LHC_NLO_LIN_GLOB |
|------------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_WH_Hbb_13TeV | 2 | 0.1 | 0.746 |
| ATLAS_ZH_Hbb_13TeV | 3 | 0.496 | 0.555 |
| ATLAS_ggF_13TeV_2015 | 9 | 1.11 | 1.111 |
| ATLAS_ggF_ZZ_13TeV | 6 | 0.958 | 0.719 |
| CMS_H_13TeV_2015_pTH | 9 | 0.8 | 0.768 |
| CMS_ggF_aa_13TeV | 6 | 1.049 | 1.003 |
| ATLAS_STXS_runII_13TeV | 36 | 0.364 | 0.387 |
| Total | | | 0.624 (0.620) |

Table 3: χ^2 table for Hdiff data

| | | SM | LHC_NLO_LIN_GLOB |
|----------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_CMS_SSinc_RunI | 22 | 0.859 | 1.063 |
| Total | | | 1.063 (0.859) |

Table 4: χ^2 table for HrunI data

| | | SM | LHC_NLO_LIN_GLOB |
|-------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_SSinc_RunII | 16 | 0.542 | 0.585 |
| CMS_SSinc_RunII | 20 | 0.853 | 0.770 |
| Total | | | 0.688 (0.715) |

Table 5: χ^2 table for HrunII data

| | | SM | LHC_NLO_LIN_GLOB |
|-----------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| LEP1_EWPOs_2006 | 19 | 1.028 | 0.613 |
| LEP_Bhabha_2013 | 21 | 1.097 | 1.421 |
| LEP_Brw_2013 | 3 | 2.632 | 2.132 |
| LEP_alphaEW | 1 | 3.966 | 2.219 |
| LEP_eeWW_182GeV | 10 | 1.38 | 1.289 |
| LEP_eeWW_189GeV | 10 | 0.885 | 0.817 |
| LEP_eeWW_198GeV | 10 | 1.609 | 1.919 |
| LEP_eeWW_206GeV | 10 | 1.085 | 1.037 |
| Total | | | 1.199 (1.238) |

Table 6: χ^2 table for LEP data

| | | SM | LHC_NLO_LIN_GLOB |
|--------------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_WW_13TeV_2016_memu | 13 | 1.657 | 1.644 |
| ATLAS_WZ_13TeV_2016_mTWZ | 6 | 1.466 | 1.386 |
| CMS_WZ_13TeV_2016_pTZ | 11 | 1.424 | 1.204 |
| CMS_WZ_13TeV_2022_pTZ | 11 | 2.215 | 1.554 |
| Total | | | 1.464 (1.716) |

Table 7: χ^2 table for VV data

| | | SM | LHC_NLO_LIN_GLOB |
|------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_WhelF_8TeV | 3 | 1.967 | 2.286 |
| ATLAS_Whel_13TeV | 2 | 0.37 | 0.191 |
| CMS_WhelF_8TeV | 3 | 0.296 | 0.208 |
| Total | | | 0.983 (0.941) |

Table 8: χ^2 table for WhelF data

| | | SM | LHC_NLO_LIN_GLOB |
|------------------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_t_sch_13TeV_inc | 1 | 0.659 | 0.826 |
| ATLAS_t_tch_13TeV_inc | 2 | 0.011 | 0.008 |
| CMS_t_tch_13TeV_2016_diff_Yt | 4 | 0.476 | 0.475 |
| CMS_t_tch_13TeV_2019_diff_Yt | 5 | 0.58 | 0.576 |
| CMS_t_tch_13TeV_inc | 2 | 0.345 | 0.257 |
| Total | | | 0.438 (0.441) |

Table 9: χ^2 table for t13 data

| | | SM | LHC_NLO_LIN_GLOB |
|--------------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_t_sch_8TeV | 1 | 0.085 | 0.004 |
| ATLAS_t_tch_8TeV_diff_Yt | 4 | 0.89 | 0.868 |
| CMS_t_sch_8TeV | 1 | 1.239 | 1.349 |
| CMS_t_tch_8TeV_diff_Yt | 6 | 0.11 | 0.136 |
| CMS_t_tch_8TeV_inc | 2 | 0.293 | 0.205 |
| Total | | | 0.433 (0.438) |

Table 10: χ^2 table for t8 data

| | | SM | LHC_NLO_LIN_GLOB |
|------------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_tW_13TeV_inc | 1 | 0.549 | 0.831 |
| ATLAS_tW_8TeV_inc | 1 | 0.026 | 0.069 |
| ATLAS_tW_slep_8TeV_inc | 1 | 0.134 | 0.318 |
| CMS_tW_13TeV_inc | 1 | 3.855 | 1.702 |
| CMS_tW_13TeV_slep_inc | 1 | 0.926 | 1.758 |
| CMS_tW_8TeV_inc | 1 | 0.0 | 0.062 |
| Total | | | 0.790 (0.915) |

Table 11: χ^2 table for tW data

| | | SM | LHC_NLO_LIN_GLOB |
|-------------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_tZ_13TeV_inc | 1 | 1.177 | 1.229 |
| ATLAS_tZ_13TeV_run2_inc | 1 | 0.048 | 0.054 |
| CMS_tZ_13TeV_2016_inc | 1 | 1.23 | 0.495 |
| CMS_tZ_13TeV_inc | 1 | 0.678 | 0.438 |
| CMS_tZ_13TeV_pTt | 3 | 0.0 | 0.049 |
| Total | | | 0.337 (0.448) |

Table 12: χ^2 table for tZ data

| | | SM | LHC_NLO_LIN_GLOB |
|-------------------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_tt_13TeV_ljets_2016_Mtt | 7 | 0.986 | 1.358 |
| CMS_tt_13TeV_Mtt | 15 | 1.588 | 1.091 |
| CMS_tt_13TeV_dilep_2015_Mtt | 6 | 1.299 | 1.492 |
| CMS_tt_13TeV_dilep_2016_Mtt | 7 | 2.282 | 2.197 |
| CMS_tt_13TeV_ljets_2015_Mtt | 8 | 0.939 | 0.806 |
| CMS_tt_13TeV_ljets_2016_Mtt | 10 | 1.992 | 1.935 |
| CMS_tt_13TeV_ljets_inc | 1 | 0.218 | 1.681 |
| Total | | | 1.439 (1.521) |

Table 13: χ^2 table for tt13 data

| | | SM | LHC_NLO_LIN_GLOB |
|----------------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_tt_8TeV_dilep_Mtt | 6 | 0.086 | 0.124 |
| ATLAS_tt_8TeV_ljets_Mtt | 7 | 2.953 | 3.112 |
| CMS_tt2D_8TeV_dilep_MttYtt | 16 | 1.628 | 1.020 |
| CMS_tt_8TeV_ljets_Ytt | 10 | 0.906 | 0.971 |
| Total | | | 1.245 (1.443) |

Table 14: χ^2 table for tt8 data

| | | SM | LHC_NLO_LIN_GLOB |
|----------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_ttW_13TeV | 1 | 0.828 | 0.547 |
| ATLAS_ttW_13TeV_2016 | 1 | 0.225 | 0.053 |
| ATLAS_ttW_8TeV | 1 | 1.334 | 0.469 |
| CMS_ttW_13TeV | 1 | 0.028 | 0.369 |
| CMS_ttW_8TeV | 1 | 1.781 | 0.867 |
| Total | | | 0.461 (0.839) |

Table 15: χ^2 table for ttW data

| | | SM | LHC_NLO_LIN_GLOB |
|----------------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_ttZ_13TeV | 1 | 0.007 | 0.001 |
| ATLAS_ttZ_13TeV_2016 | 1 | 0.001 | 0.021 |
| ATLAS_ttZ_13TeV_pTZ | 7 | 2.243 | 2.251 |
| ATLAS_ttZ_8TeV | 1 | 1.314 | 1.490 |
| CMS_ttZ_13TeV | 1 | 1.011 | 1.219 |
| CMS_ttZ_13TeV_pTZ | 4 | 0.732 | 0.653 |
| CMS_ttZ_8TeV | 1 | 0.042 | 0.018 |
| Total | | | 1.320 (1.313) |

Table 16: χ^2 table for ttZ data

| | | SM | LHC_NLO_LIN_GLOB |
|----------------|-------------------|--------------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} | χ^2/N_{data} |
| ATLAS_tta_8TeV | 1 | 0.422 | 0.298 |
| CMS_tta_8TeV | 1 | 0.508 | 0.008 |
| Total | | | 0.153 (0.465) |

Table 17: χ^2 table for tta data

| | LHC_NLO_LIN_GLOB | |
|---------|-------------------|--------------------------|
| Process | N_{data} | χ^2/N_{data} |
| tt8 | 39.0 | 1.245 (1.443) |
| tt13 | 54.0 | 1.439 (1.521) |
| tta | 2.0 | 0.153 (0.465) |
| WhelF | 8.0 | 0.983 (0.941) |
| AC | 14.0 | 0.776 (0.947) |
| 4H | 10.0 | 1.315 (1.284) |
| ttZ | 16.0 | 1.320 (1.313) |
| ttW | 5.0 | 0.461 (0.839) |
| t8 | 14.0 | 0.433 (0.438) |
| t13 | 14.0 | 0.438 (0.441) |
| tW | 6.0 | 0.790 (0.915) |
| tZ | 7.0 | 0.337 (0.448) |
| HrunI | 22.0 | 1.063 (0.859) |
| HrunII | 36.0 | 0.688 (0.715) |
| Hdiff | 71.0 | 0.624 (0.620) |
| VV | 41.0 | 1.464 (1.716) |
| LEP | 84.0 | 1.199 (1.238) |
| Total | 443.0 | 1.026 (1.088) |

Table 18: χ^2 table for grouped data. In parenthesis is the total SM χ^2 for the dataset included in the fit. The SM column refers to all the datasets available in the group