

| Uncertainty of channel                          | SR                  |
|-------------------------------------------------|---------------------|
| Total background expectation                    | 6383.87             |
| Total statistical ( $\sqrt{N_{\text{exp}}}$ )   | $\pm 79.90$         |
| Total background systematic                     | $\pm 79.53$ [1.25%] |
| alpha_JET_Flavor_Composition                    | $\pm 209.25$ [3.3%] |
| alpha_MET_SoftTrk_ResoPerp                      | $\pm 144.94$ [2.3%] |
| alpha_MET_SoftTrk_Scale                         | $\pm 144.13$ [2.3%] |
| alpha_JET_Pileup_RhoTopology                    | $\pm 129.19$ [2.0%] |
| alpha_MET_SoftTrk_ResoPara                      | $\pm 128.23$ [2.0%] |
| mu_Sig                                          | $\pm 116.62$ [1.8%] |
| alpha_ZjetsQCDscale                             | $\pm 114.56$ [1.8%] |
| alpha_JET_EtaIntercalibration_Modelling         | $\pm 113.57$ [1.8%] |
| mu_WZ                                           | $\pm 104.41$ [1.6%] |
| mu_emu                                          | $\pm 96.77$ [1.5%]  |
| alpha_qqZZQCDscale                              | $\pm 88.75$ [1.4%]  |
| alpha_JET_Flavor_Response                       | $\pm 85.39$ [1.3%]  |
| alpha_WZQCDscale                                | $\pm 80.00$ [1.3%]  |
| alpha_JET_Pileup_OffsetMu                       | $\pm 69.70$ [1.1%]  |
| alpha_lumi                                      | $\pm 63.94$ [1.0%]  |
| alpha_WZPDF                                     | $\pm 62.05$ [0.97%] |
| alpha_qqZZEWcorr                                | $\pm 60.33$ [0.94%] |
| alpha_ttbarQCDscale                             | $\pm 59.62$ [0.93%] |
| alpha_JET_JER_EffectiveNP_1                     | $\pm 56.45$ [0.88%] |
| alpha_JET_Pileup_OffsetNPV                      | $\pm 50.10$ [0.78%] |
| alpha_JET_EffectiveNP_Modelling1                | $\pm 50.09$ [0.78%] |
| alpha_WWQCDscale                                | $\pm 44.56$ [0.70%] |
| alpha_qqZZPDF                                   | $\pm 39.65$ [0.62%] |
| alpha_JET_JER_EffectiveNP_2                     | $\pm 38.67$ [0.61%] |
| alpha_ttbarME                                   | $\pm 35.76$ [0.56%] |
| alpha_JET_JER_EffectiveNP_4                     | $\pm 35.30$ [0.55%] |
| alpha_PRW_DATASF                                | $\pm 34.71$ [0.54%] |
| alpha_ggZZQCDscaleNorm                          | $\pm 33.99$ [0.53%] |
| alpha_FT_EFF_Light_systematics                  | $\pm 30.20$ [0.47%] |
| alpha_ZjetsPDF                                  | $\pm 29.13$ [0.46%] |
| alpha_JET_JER_EffectiveNP_7restTerm             | $\pm 23.06$ [0.36%] |
| alpha_JET_JER_DataVsMC_MC16                     | $\pm 21.98$ [0.34%] |
| alpha_FT_EFF_B_systematics                      | $\pm 21.48$ [0.34%] |
| alpha_FT_EFF_C_systematics                      | $\pm 20.35$ [0.32%] |
| alpha_EG_SCALE_ALL                              | $\pm 19.51$ [0.31%] |
| alpha_JET_JER_EffectiveNP_3                     | $\pm 18.06$ [0.28%] |
| gamma_stat_SR_BDTr_bin_3                        | $\pm 16.18$ [0.25%] |
| gamma_stat_SR_BDTr_bin_6                        | $\pm 15.01$ [0.24%] |
| alpha_JET_JER_EffectiveNP_6                     | $\pm 14.98$ [0.23%] |
| gamma_stat_SR_BDTr_bin_5                        | $\pm 14.94$ [0.23%] |
| gamma_stat_SR_BDTr_bin_4                        | $\pm 14.86$ [0.23%] |
| alpha_ttbarPS                                   | $\pm 14.68$ [0.23%] |
| alpha_MUON_SAGITTA_RHO                          | $\pm 14.37$ [0.23%] |
| alpha_JET_EtaIntercalibration_TotalStat         | $\pm 13.59$ [0.21%] |
| alpha_JET_Pileup_PtTerm                         | $\pm 12.73$ [0.20%] |
| alpha_EG_RESOLUTION_ALL                         | $\pm 12.22$ [0.19%] |
| gamma_stat_SR_BDTr_bin_7                        | $\pm 11.63$ [0.18%] |
| alpha_topME                                     | $\pm 11.49$ [0.18%] |
| alpha_MUON_MS                                   | $\pm 10.28$ [0.16%] |
| gamma_stat_SR_BDTr_bin_2                        | $\pm 9.80$ [0.15%]  |
| alpha_JET_JER_EffectiveNP_5                     | $\pm 9.17$ [0.14%]  |
| alpha_FT_EFF_extrapolation_from_charm           | $\pm 9.09$ [0.14%]  |
| alpha_MUON_SCALE                                | $\pm 9.07$ [0.14%]  |
| gamma_stat_SR_BDTr_bin_1                        | $\pm 8.59$ [0.13%]  |
| gamma_stat_SR_BDTr_bin_9                        | $\pm 8.56$ [0.13%]  |
| alpha_topPS                                     | $\pm 8.55$ [0.13%]  |
| alpha_MUON_EFF_RECO_SYS                         | $\pm 8.51$ [0.13%]  |
| gamma_stat_SR_BDTr_bin_8                        | $\pm 8.32$ [0.13%]  |
| alpha_JET_EffectiveNP_Statistical2              | $\pm 7.41$ [0.12%]  |
| alpha_MUON_ID                                   | $\pm 7.38$ [0.12%]  |
| alpha_ttbarPDF                                  | $\pm 7.29$ [0.11%]  |
| alpha_qqZZPSCCKW                                | $\pm 6.89$ [0.11%]  |
| gamma_stat_SR_BDTr_bin_10                       | $\pm 6.40$ [0.10%]  |
| gamma_stat_SR_BDTr_bin_11                       | $\pm 6.18$ [0.10%]  |
| alpha_WWPDF                                     | $\pm 5.96$ [0.09%]  |
| alpha_topQCDscale                               | $\pm 5.33$ [0.08%]  |
| gamma_stat_SR_BDTr_bin_12                       | $\pm 5.17$ [0.08%]  |
| gamma_stat_SR_BDTr_bin_0                        | $\pm 4.97$ [0.08%]  |
| alpha_JET_JvtEfficiency                         | $\pm 4.58$ [0.07%]  |
| gamma_stat_SR_BDTr_bin_13                       | $\pm 4.29$ [0.07%]  |
| alpha_MUON_SAGITTA_RESBIAS                      | $\pm 4.12$ [0.06%]  |
| alpha_ZZ4QCDscale                               | $\pm 4.11$ [0.06%]  |
| alpha_qqZZPSCCKIN                               | $\pm 4.05$ [0.06%]  |
| alpha_JET_EffectiveNP_Modelling2                | $\pm 3.94$ [0.06%]  |
| alpha_JET_EtaIntercalibration_NonClosure_posEta | $\pm 3.24$ [0.05%]  |
| gamma_stat_SR_BDTr_bin_14                       | $\pm 3.05$ [0.05%]  |
| alpha_JET_EffectiveNP_Modelling3                | $\pm 2.93$ [0.05%]  |
| alpha_ZZ4IPDF                                   | $\pm 2.34$ [0.04%]  |
| alpha_QCDscale_ggVHLep_PTV75                    | $\pm 1.92$ [0.03%]  |
| alpha_topPDF                                    | $\pm 1.91$ [0.03%]  |
| alpha_QCDscale_ggVHLep_mu                       | $\pm 1.85$ [0.03%]  |
| alpha_EWKZZQCDscale                             | $\pm 1.70$ [0.03%]  |
| alpha_JET_EffectiveNP_Detector1                 | $\pm 1.46$ [0.02%]  |
| alpha_VVVQCDscale                               | $\pm 1.34$ [0.02%]  |
| alpha_JET_EffectiveNP_Mixed1                    | $\pm 1.26$ [0.02%]  |
| alpha_topInterference                           | $\pm 1.26$ [0.02%]  |
| alpha_JET_EtaIntercalibration_NonClosure_negEta | $\pm 1.13$ [0.02%]  |
| alpha_EL_EFF_ID_SIMPLIFIED_UncorrUncertaintyNP8 | $\pm 1.02$ [0.02%]  |
| alpha_EL_EFF_ID_CorrUncertaintyNP14             | $\pm 0.99$ [0.02%]  |
| alpha_qqZZPSQSF                                 | $\pm 0.87$ [0.01%]  |
| alpha_QCDscale_qqVHLep_PTV75                    | $\pm 0.65$ [0.01%]  |
| alpha_QCDscale_ggVHLep_mig01                    | $\pm 0.49$ [0.01%]  |
| alpha_JET_EffectiveNP_Mixed2                    | $\pm 0.32$ [0.01%]  |
| alpha_VVVPDF                                    | $\pm 0.23$ [0.00%]  |
| alpha_qqVH_nloEWKWeight                         | $\pm 0.20$ [0.00%]  |
| alpha_JET_EffectiveNP_Statistical4              | $\pm 0.20$ [0.00%]  |
| alpha_PDF4LHC_NLO_30_alphaS                     | $\pm 0.18$ [0.00%]  |
| alpha_QCDscale_qqVHLep_mig01                    | $\pm 0.17$ [0.00%]  |
| alpha_PDF4LHC_NLO_30_EV20                       | $\pm 0.17$ [0.00%]  |
| alpha_QCDscale_ggVHLep_PTV150                   | $\pm 0.15$ [0.00%]  |
| alpha_QCDscale_qqVHLep_mu                       | $\pm 0.14$ [0.00%]  |
| alpha_QCDscale_ggVHLep_mig12                    | $\pm 0.14$ [0.00%]  |
| alpha_PDF4LHC_NLO_30_EV14                       | $\pm 0.13$ [0.00%]  |
| alpha_PDF4LHC_NLO_30_EV4                        | $\pm 0.11$ [0.00%]  |
| alpha_PDF4LHC_NLO_30_EV11                       | $\pm 0.09$ [0.00%]  |
| alpha_PDF4LHC_NLO_30_EV1                        | $\pm 0.09$ [0.00%]  |
| alpha_PDF4LHC_NLO_30_EV2                        | $\pm 0.08$ [0.00%]  |
| alpha_PDF4LHC_NLO_30_EV28                       | $\pm 0.08$ [0.00%]  |
| alpha_QCDscale_qqVHLep_mig12                    | $\pm 0.08$ [0.00%]  |
| alpha_PDF4LHC_NLO_30_EV6                        | $\pm 0.08$ [0.00%]  |
| alpha_QCDscale_qqVHLep_PTV150                   | $\pm 0.07$ [0.00%]  |
| alpha_ggZZPSQSF                                 | $\pm 0.04$ [0.00%]  |
| alpha_JET_EffectiveNP_Statistical6              | $\pm 0.01$ [0.00%]  |
| alpha_JET_EffectiveNP_Statistical5              | $\pm 0.01$ [0.00%]  |
| alpha_JET_EffectiveNP_Statistical3              | $\pm 0.01$ [0.00%]  |