|       |                            | old      |       | new      |       |
|-------|----------------------------|----------|-------|----------|-------|
| Class | Coefficients               | Fitted   | Fixed | Fitted   | Fixed |
| 2FB   | $c_{tG}$                   | ✓        |       | ✓        |       |
|       | $c_{Qq}^{1,8}$             | ✓        |       | ✓        |       |
|       | $c_{Qq}^{1,1}$             | ✓        |       | ✓        |       |
|       | $c_{Qq}^{3,8}$             | ✓        |       | ✓        |       |
|       | $c_{Qq}^{3,1}$             | ✓        |       | ✓        |       |
|       | $c_{tq}^{87}$              | <b>√</b> |       | <b>√</b> |       |
|       | $c_{tq}^1 \\ c_{tu}^8$     | <b>√</b> |       | <b>√</b> |       |
| 2L2H  | $c_{tu}^8$                 | ✓        |       | ✓        |       |
|       | $c_{tu}^1$                 | ✓        |       | ✓        |       |
|       | $c_{Qu}^8$                 | ✓        |       | ✓        |       |
|       | $c_{Qu}^1$                 | <b>√</b> |       | <b>√</b> |       |
|       | $c_{Qu}^{c}$               | <b>√</b> |       | <b>√</b> |       |
|       | $c_{td}^1$                 | <b>√</b> |       | <b>√</b> |       |
|       | $c_{Od}^8$                 | <b>√</b> |       | <b>√</b> |       |
|       | $c_{Qd}^{ m I}$            | <b>√</b> |       | <b>√</b> |       |
|       | Number fitted coefficients | 15       |       | 15       |       |

Table 1: Coefficient comparison

| Type                | Datasets                | old      | new      |
|---------------------|-------------------------|----------|----------|
| $\operatorname{tt}$ | ATLAS_tt_8TeV_ljets_Mtt | <b>√</b> | <b>√</b> |

Table 1: Dataset comparison

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

|                         |               | SM                    | old               | new               |
|-------------------------|---------------|-----------------------|-------------------|-------------------|
| Process                 | $N_{ m data}$ | $\chi^2/N_{\rm data}$ | $\chi^2/N_{data}$ | $\chi^2/N_{data}$ |
| ATLAS_tt_8TeV_ljets_Mtt | 7             | 2.953                 | 106.730           | 118.541           |
| Total                   |               |                       | 106.730 (2.953)   | 118.541 (2.953)   |

Table 1:  $\chi^2$  table for tt data

|         |               | old                   | new           |                       |  |
|---------|---------------|-----------------------|---------------|-----------------------|--|
| Process | $N_{ m data}$ | $\chi^2/N_{\rm data}$ | $N_{ m data}$ | $\chi^2/N_{\rm data}$ |  |
| tt      | 7.0           | 106.730 (2.953)       | 7.0           | 118.541 (2.953)       |  |
| Total   | 7.0           | 106.730 (2.953)       | 7.0           | 118.541 (2.953)       |  |

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





