8 Supplementary material for LHCb-PAPER-2017-007

This appendix contains supplementary material that will be posted on the public CDS record but will not appear in the paper.

8.1 Significance of the fraction $\frac{N_{\eta_c(2S)}}{N_{\eta_c(1S)}}$

Figure 12 shows the increase in $\chi^2$ with respect to the best fit value as a function of the $N_{\eta_c(2S)}/N_{\eta_c(1S)}$ yield ratio, taking into account only the statistical uncertainties. The ratio is different from zero with a significance of 3.7 standard deviations.

![Figure 12: Change in $\chi^2$ with respect to the best fit value as a function of the $\frac{N_{\eta_c(2S)}}{N_{\eta_c(1S)}}$ yield ratio.](image)