

342 Supplementary material for LHCb-PAPER-2016-039

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

345 Figure 7 shows the ratio of the BDT distribution of tagging particles classified as signal and tagging particles classified as background, for the $SS\pi$ and the SSp taggers. In
 346 case of multiple candidates per B^0 candidate, only the one with the highest BDT output
 347 value is shown. Figure 8 shows the calibration of the SS_{comb} tagger for $B^0 \rightarrow D^-\pi^+$
 348 candidates in the 8 TeV data sample and Fig. 9 shows the decay-time distributions of B^0
 349 candidates tagged by the $SS\pi$, SSp and SS_{comb} taggers. The fit functions correspond to
 350 the PDF of Eq. 8.
 351

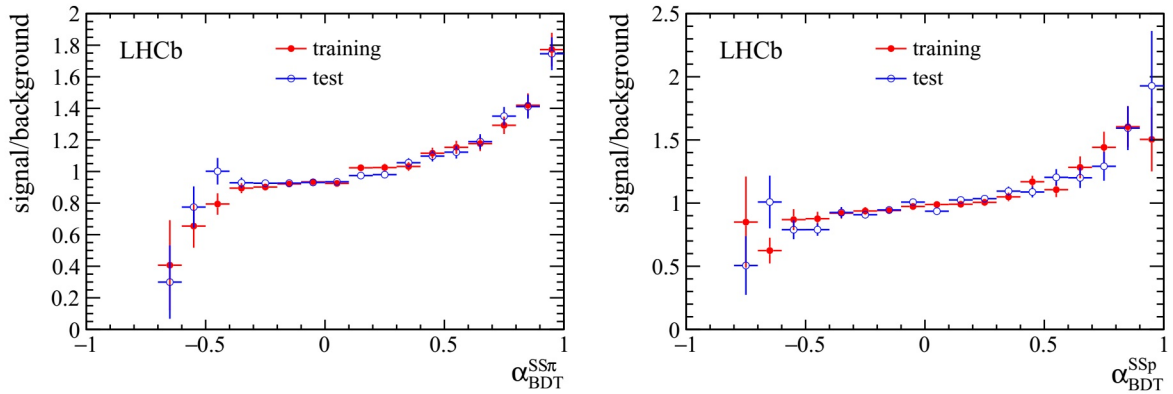


Figure 7: Ratio of the BDT distributions of tagging particles classified as signal (correct-tag decision) and as background (wrong-tag decision), for (left) the $SS\pi$ and (right) the SSp taggers.

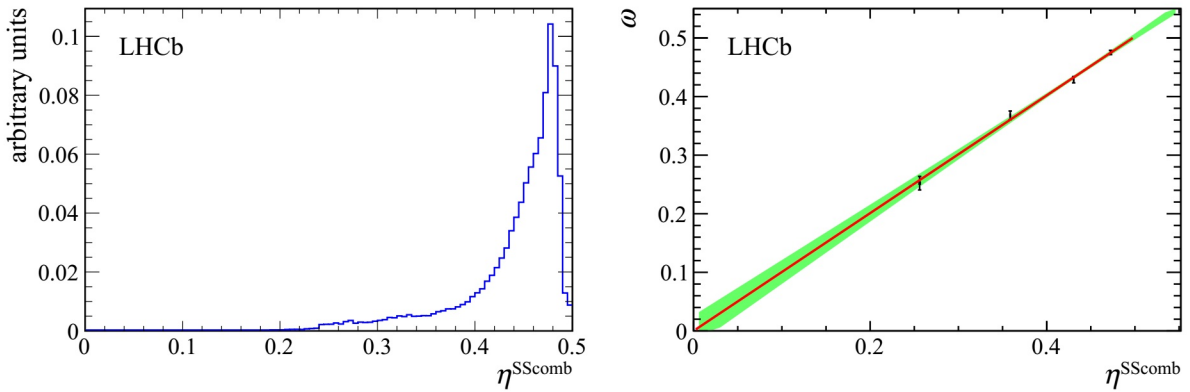


Figure 8: (left) Distribution of the mistag probability $\eta^{SS_{comb}}$ and (right) average measured mistag fraction ω as a function of $\eta^{SS_{comb}}$ for $B^0 \rightarrow D^-\pi^+$ candidates. The green shaded area shows the 68% confidence range.

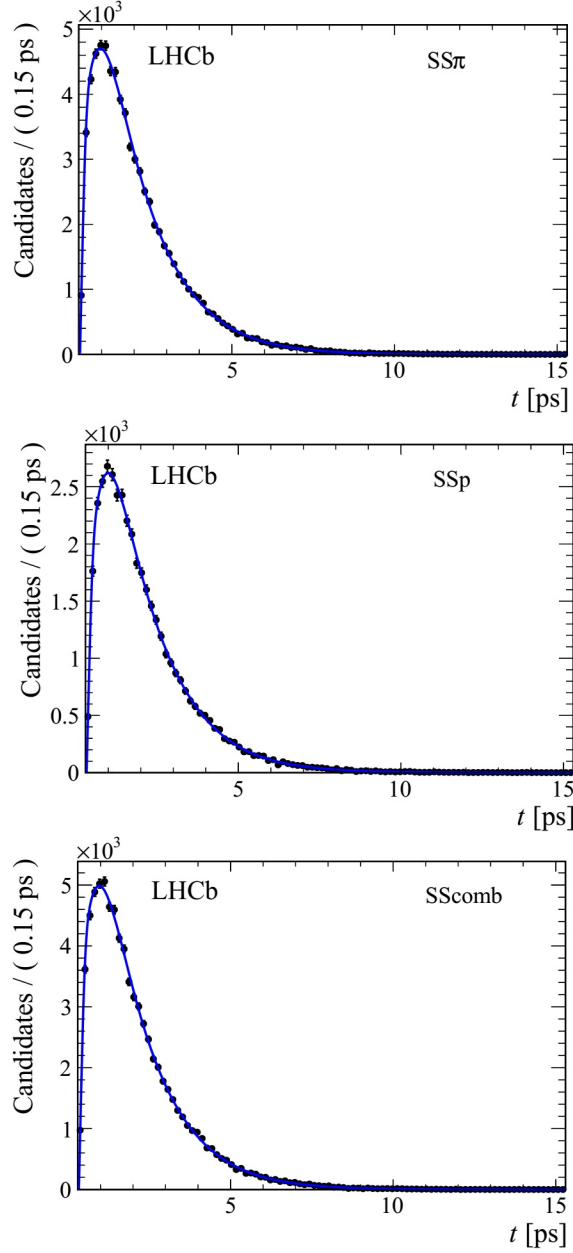


Figure 9: Decay-time distributions of $B^0 \rightarrow D^- \pi^+$ candidates tagged by (top) $SS\pi$, (middle) SSp and (bottom) $SScomb$ taggers. Data points (black dots) correspond to the signal B^0 candidates, the solid blue curves represent the fit functions.