



Supplementary Material
CERN-EP-2020-175
LHCb-PAPER-2020-019
October 14, 2020

Supplementary Material:
Measurement of the CKM angle γ
in $B^\pm \rightarrow DK^\pm$ and $B^\pm \rightarrow D\pi^\pm$
decays with $D \rightarrow K_S^0 h^+ h^-$

1 Supplementary material for LHCb-PAPER-2020-019

These plots might be useful for a longer seminar. Figure 1 shows the invariant-mass distribution for a bin pair that exhibits visible CP asymmetry. Figure 2 shows the invariant-mass distribution for a bin that also has significant CP asymmetry, and where the $B_s^0 \rightarrow DK\pi$ contribution is large. The Dalitz plots for the $B^\pm \rightarrow D\pi^\pm$ decay are also included in Fig. 3.

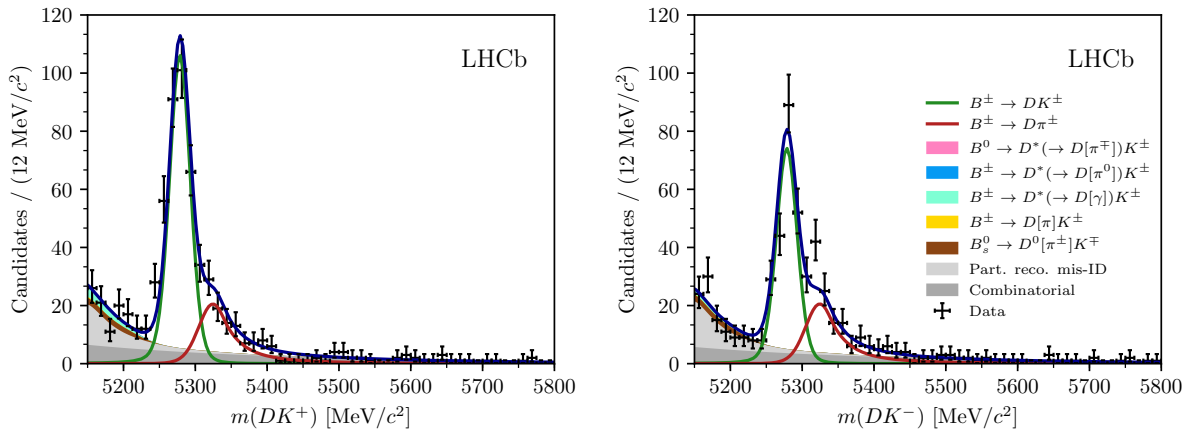


Figure 1: Invariant mass distributions for the (left) $B^+ \rightarrow DK^+$ candidates in bin -4 and (right) the $B^- \rightarrow DK^-$ candidates in bin +4, where $D \rightarrow K_S^0 \pi^+ \pi^-$ and the K_S^0 is reconstructed in the downstream category.

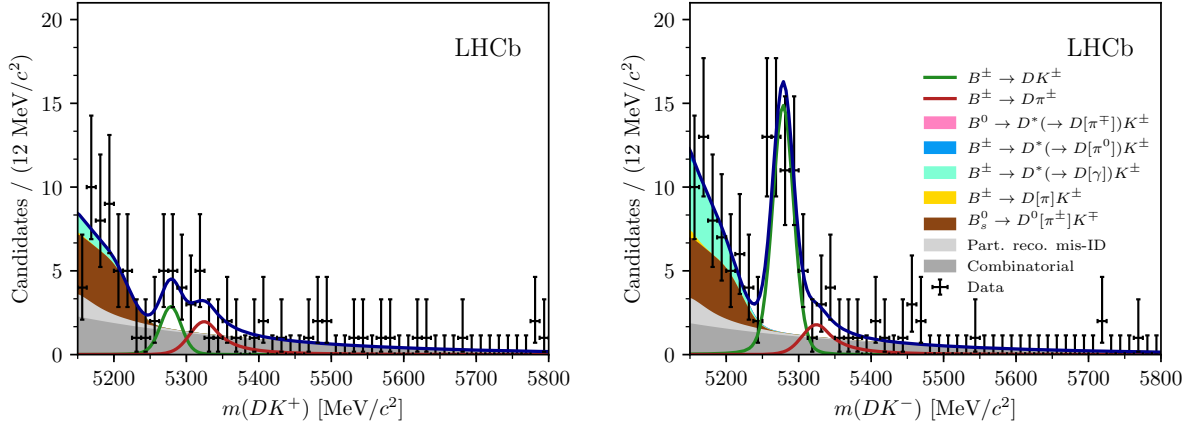


Figure 2: Invariant mass distributions for the (left) $B^+ \rightarrow DK^+$ candidates in bin -2 and (right) the $B^- \rightarrow DK^-$ candidates in bin +2, where $D \rightarrow K_S^0 \pi^+ \pi^-$ and the K_S^0 is reconstructed in the downstream category.

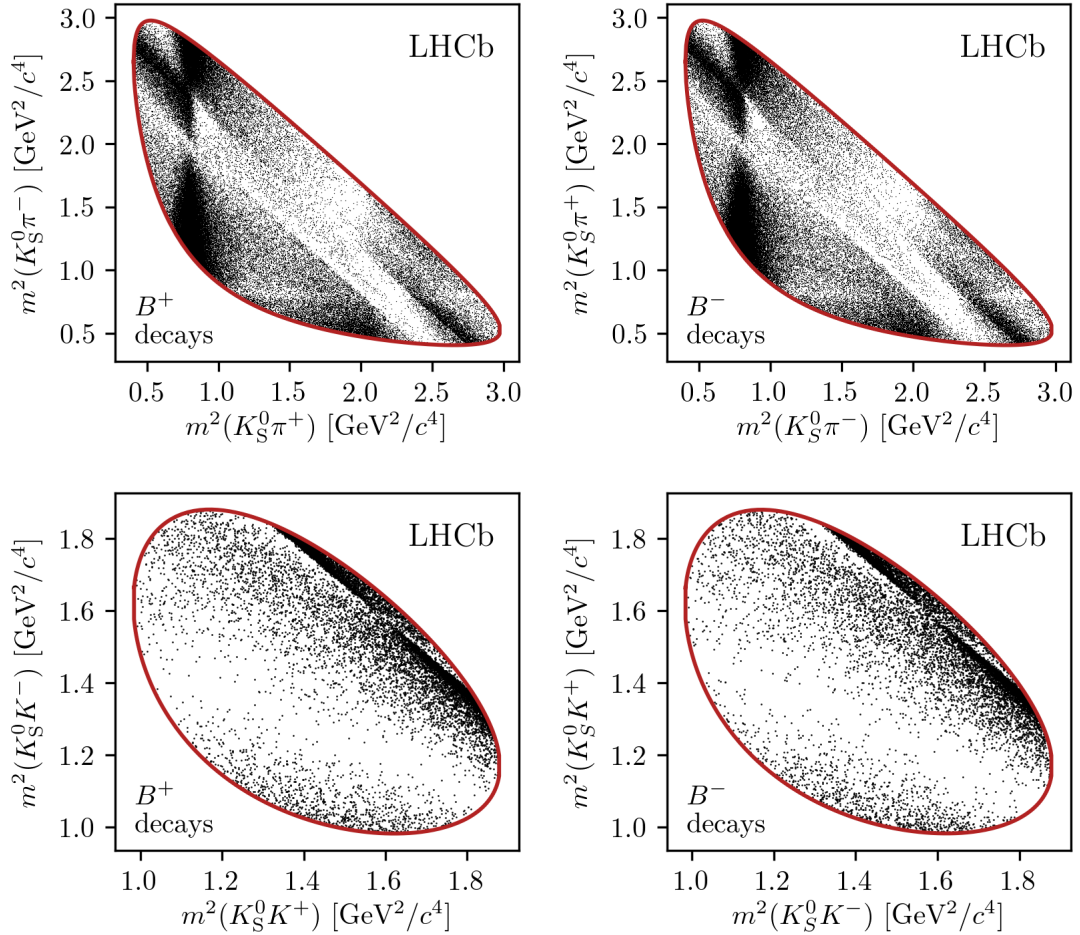


Figure 3: Dalitz plots of (left) $B^+ \rightarrow D\pi^+$ and (right) $B^- \rightarrow D\pi^-$ candidates in the signal region, in the (top) $D \rightarrow K_S^0 \pi^+ \pi^-$ and (bottom) $D \rightarrow K_S^0 K^+ K^-$ channels.