Supplementary material for LHCB-PAPER-2016-043

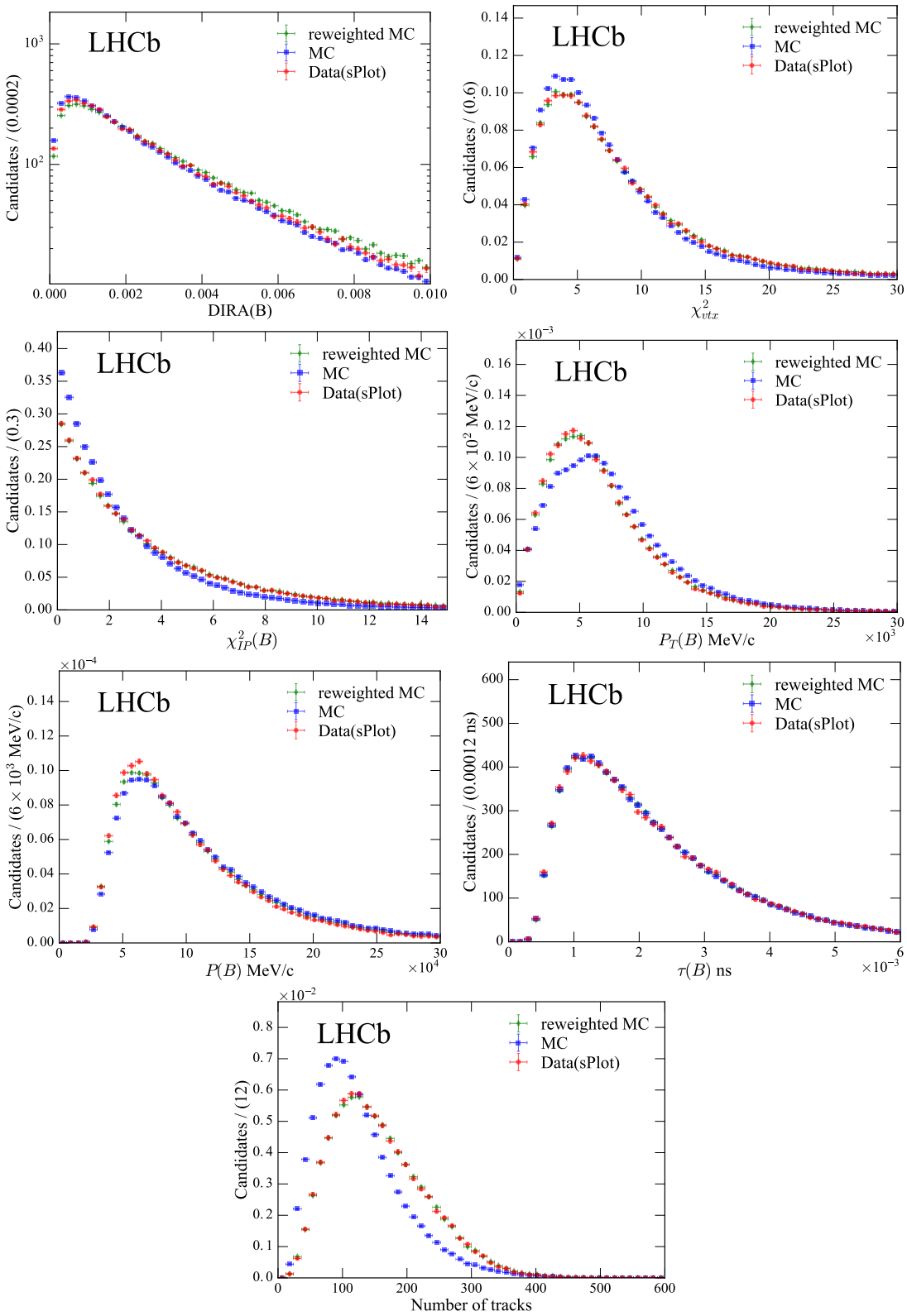

Figure 1: Comparison of $B^0_s \to J/\psi\,(\to \mu^+\mu^-)\phi(\to K^+K^-)$ sWeighted data (red dots), simulation (blue squares) and weighted simulation (green diamonds).

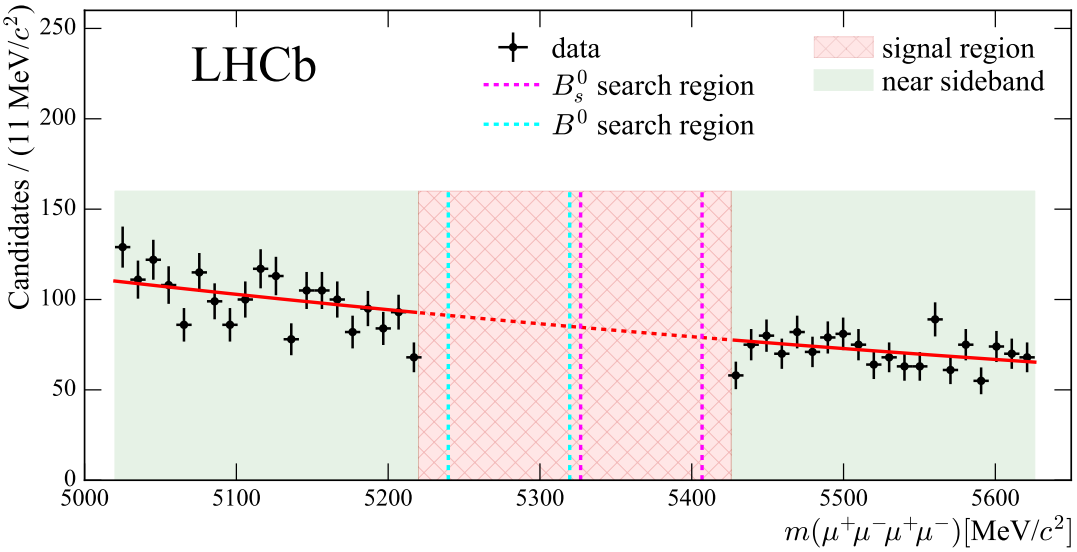

Figure 2: The optimisation part of the $B^0_{(s)} \to \mu^+\mu^-\mu^+\mu^-$ mass sidebands, before applying MVA and PID criteria, fit by an exponential function to determine the number of background candidates in the signal region, that is used in the MVA and PID cut optimisation.

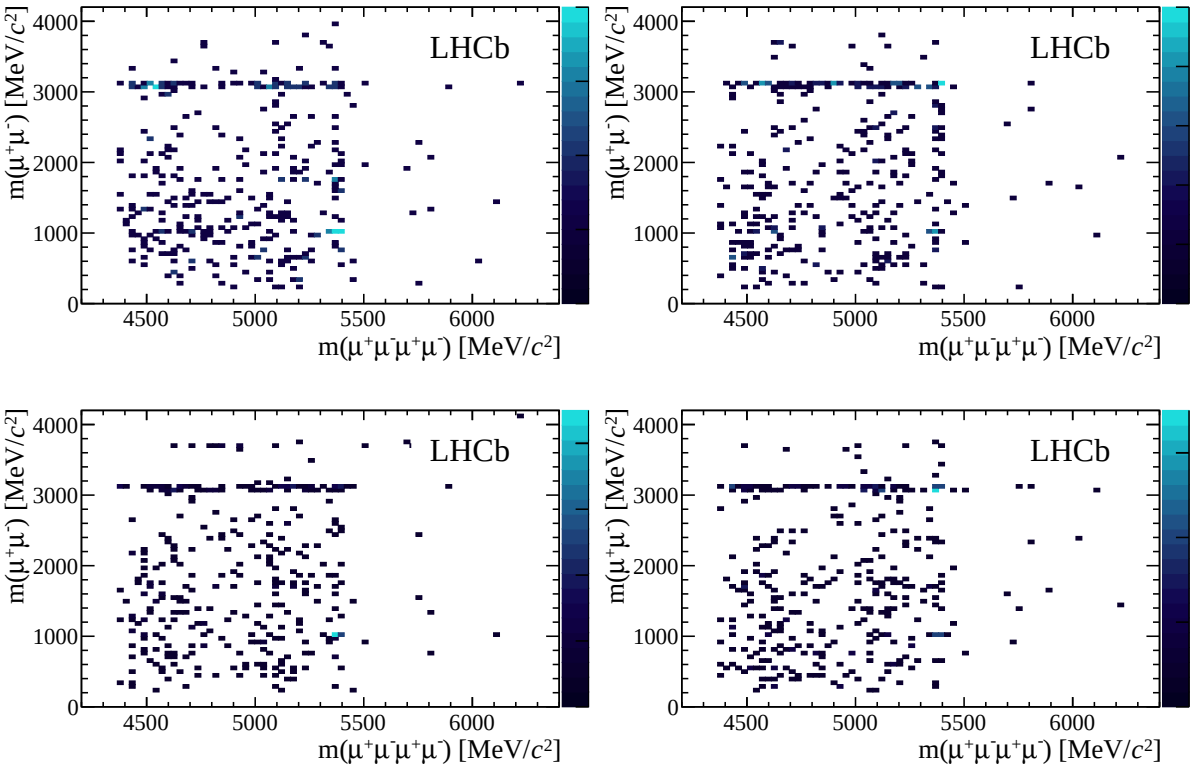

Figure 3: Invariant mass distribution of the four-muon system vs. the invariant mass of all possible dimuon systems. The complete selection except for the dimuon mass vetoes is applied.

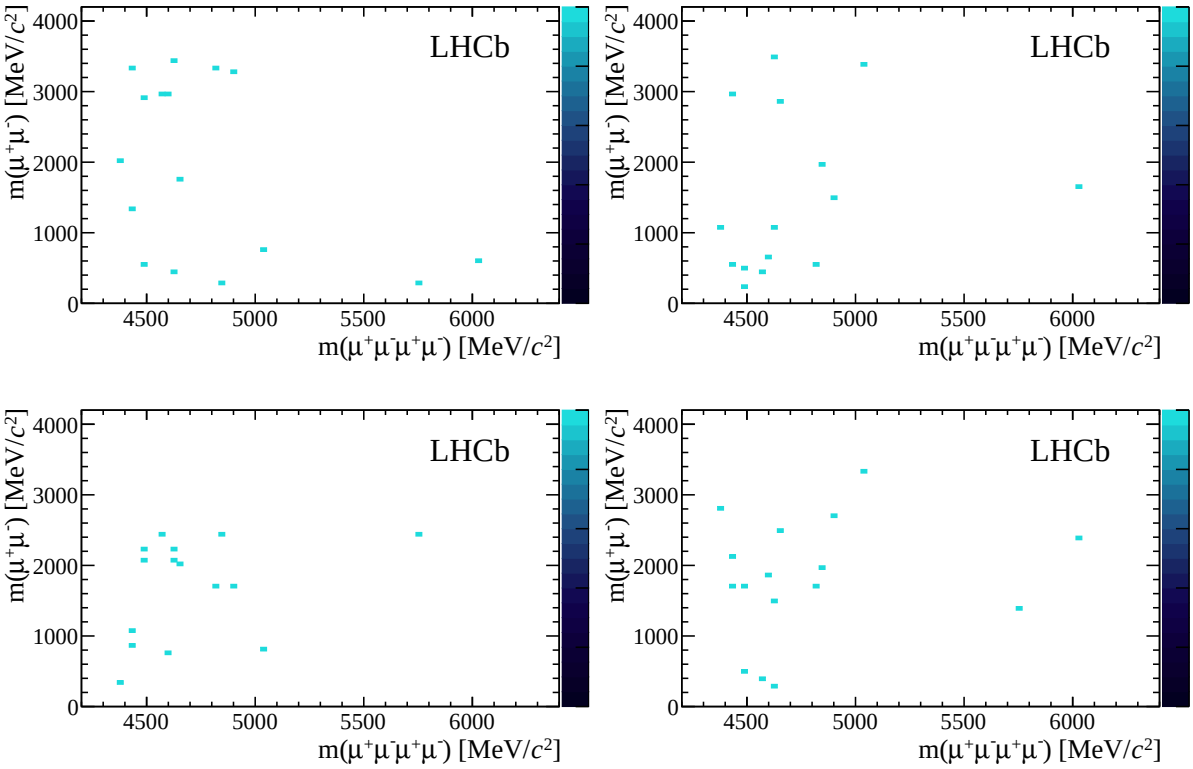

Figure 4: Invariant mass distribution of the four-muon system vs. the invariant mass of all possible dimuon systems. The complete selection is applied.