## <sup>412</sup> 8 Supplementary material for LHCb-PAPER-2023 <sup>413</sup> 038

<sup>414</sup> Additional differential measurements of  $R_{\phi\pi}^{(d,s)}$  as a function of kinematic and geometrical <sup>415</sup> variables, and of a detector occupancy proxy, are shown in Fig. 7. No significant dependence <sup>416</sup> as a function of these variables is observed.



Figure 7: Top: measured  $R_{\phi\pi}^{(d,s)}$  as a function of (left) the minimum pseudorapidity of the two leptons, and (right) the angle between the positively charged lepton momentum and the mother meson direction in the dilepton rest frame,  $\cos \theta_{\ell}$ . Bottom: measured  $R_{\phi\pi}^{(d,s)}$  as a function of (left) the difference in  $\chi^2$  of track fit to a given primary vertex when reconstructed with and without the considered candidate  $B^+$  or  $D_{(s)}^+$  meson and (right) the total number of reconstructed primary vertices in the event. The uncertainties shown are statistical only.