

FIG. 1: This figure shows $M[(K^+K^-)]$ distribution, which was produced using phase-II 356 pb^{-1} prod6 hadron skim data. The upper most curve shows the distribution when no KID criterion is applied. The middle curve shows the distribution when KID (**TOP only**) >0.5 criterion was applied on one of the two tracks (K^+) and lower most curve shows the distribution with KID (**TOP only**) >0.5 criterion applied to both the tracks. For this plot we have used prod6 data excluding the bad top runs (# 2824 - 3547). Selection criteria used for reconstruction are $|d_0| < 2\text{cm}$, $|dz| < 4\text{cm}$, $|M(K^+K^-) - M_\phi^{\text{PDG}}| < 0.050\text{ GeV}/c^2$ and vertex fit using two charged kaon tracks. Further details are described in the internal note - BELLE2-NOTE-PH-2018-037.

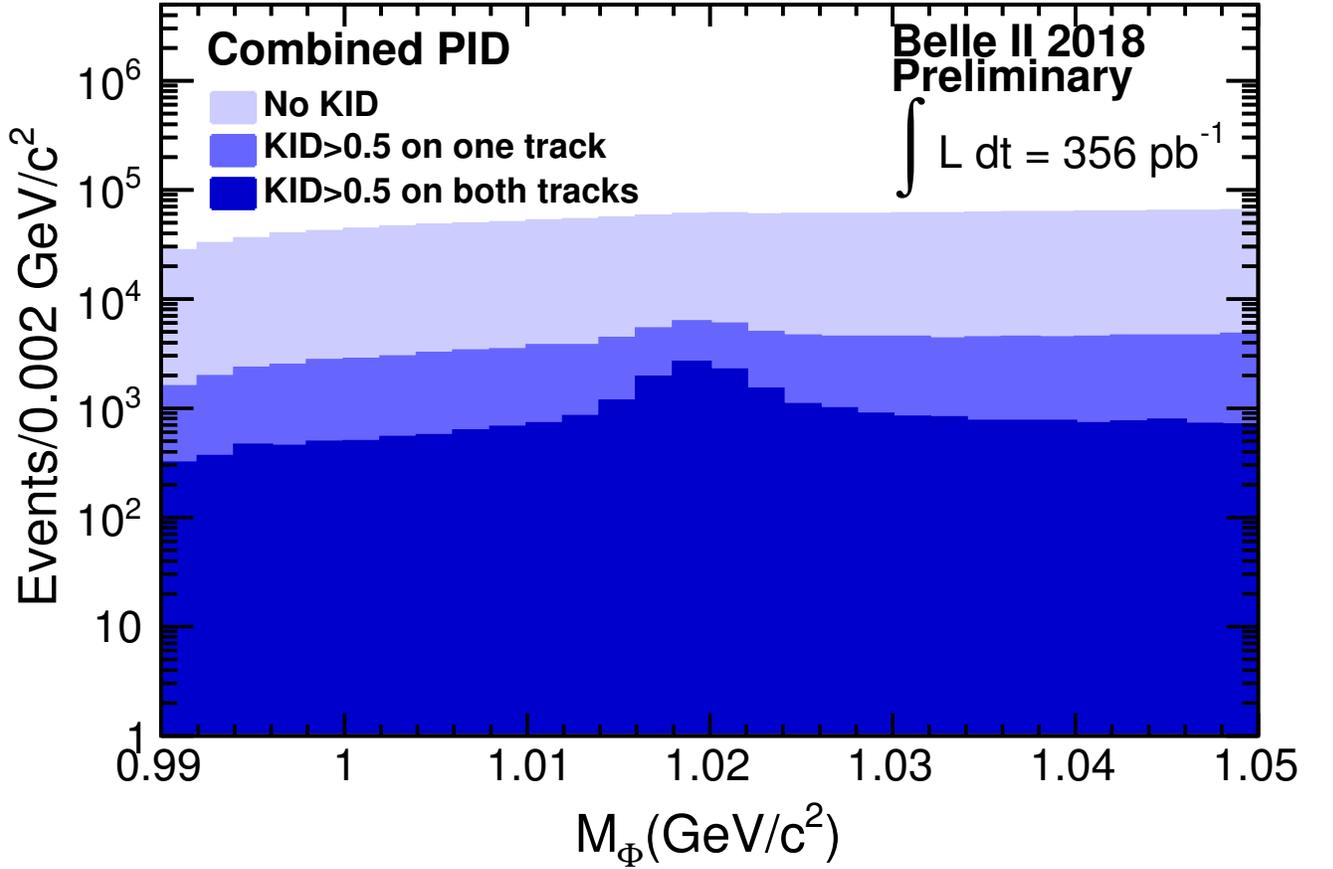


FIG. 2: This figure shows $M[(K^+K^-)]$ distribution, which was produced using phase-II 356 pb^{-1} prod6 hadron skim data. The upper most curve shows the distribution when no KID criterion is applied. The middle curve shows the distribution when KID (**combined**) >0.5 criterion was applied on one of the two tracks (K^+) and lower most curve shows the distribution with KID (**combined**) >0.5 criterion applied to both the tracks. For this plot we have used prod6 data excluding the bad top runs (# 2824 - 3547). Selection criteria used for reconstruction are $|d_0| < 2\text{cm}$, $|dz| < 4\text{cm}$, $|M(K^+K^-) - M_\phi^{\text{PDG}}| < 0.050\text{ GeV}/c^2$ and vertex fit using two charged kaon tracks. Further details are described in the internal note - BELLE2-NOTE-PH-2018-037.

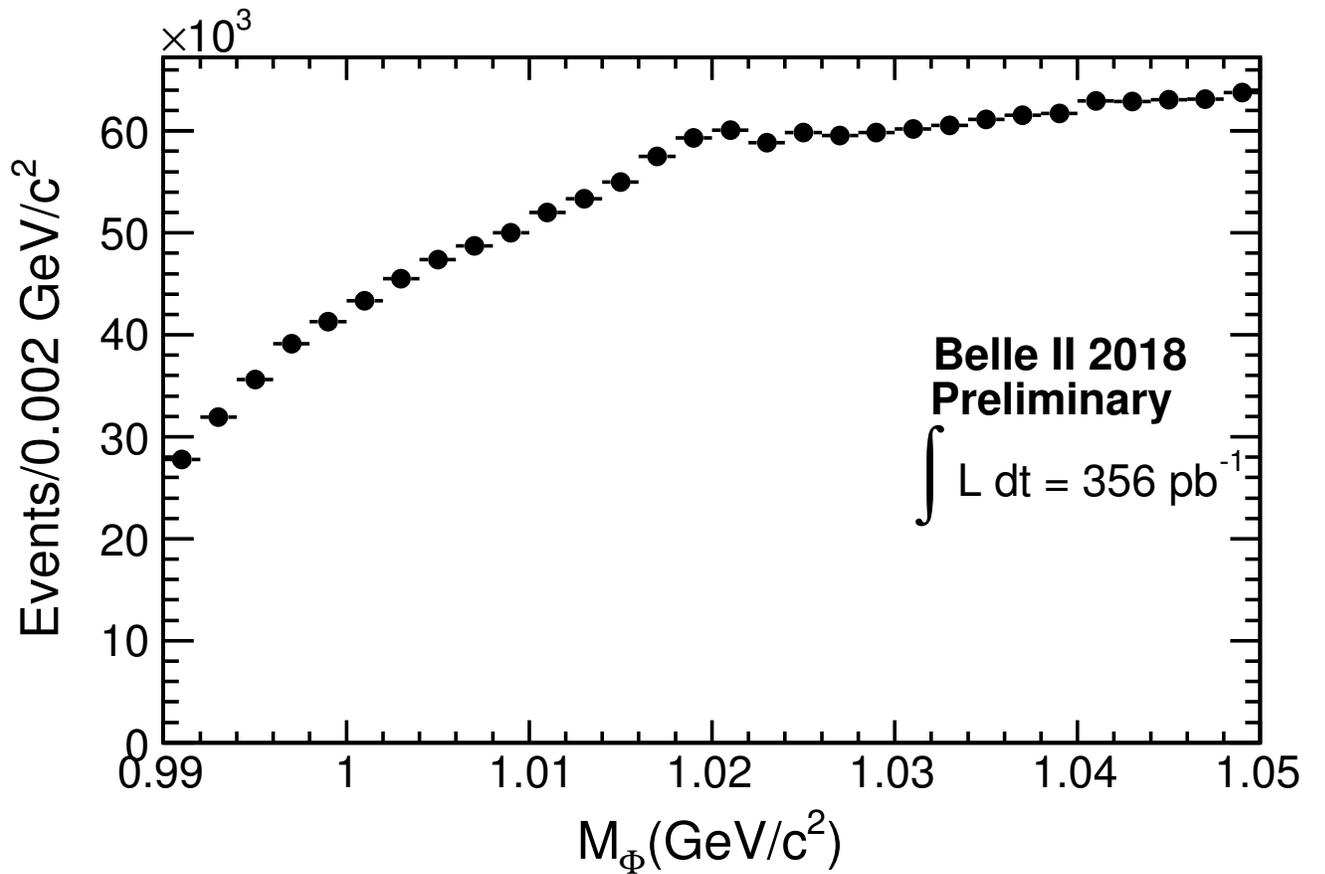


FIG. 3: This figure shows $M[(K^+K^-)]$ distribution, which was produced using phase-II 356 pb^{-1} prod6 hadron skim data. No PID criteria is applied on kaon tracks. Selection criteria used for reconstruction are $|d_0| < 2\text{cm}$, $|dz| < 4\text{cm}$, $|M(K^+K^-) - M_\phi^{\text{PDG}}| < 0.050 \text{ GeV}/c^2$ and vertex fit using two charged kaon tracks. Further details are described in the internal note - BELLE2-NOTE-PH-2018-037.

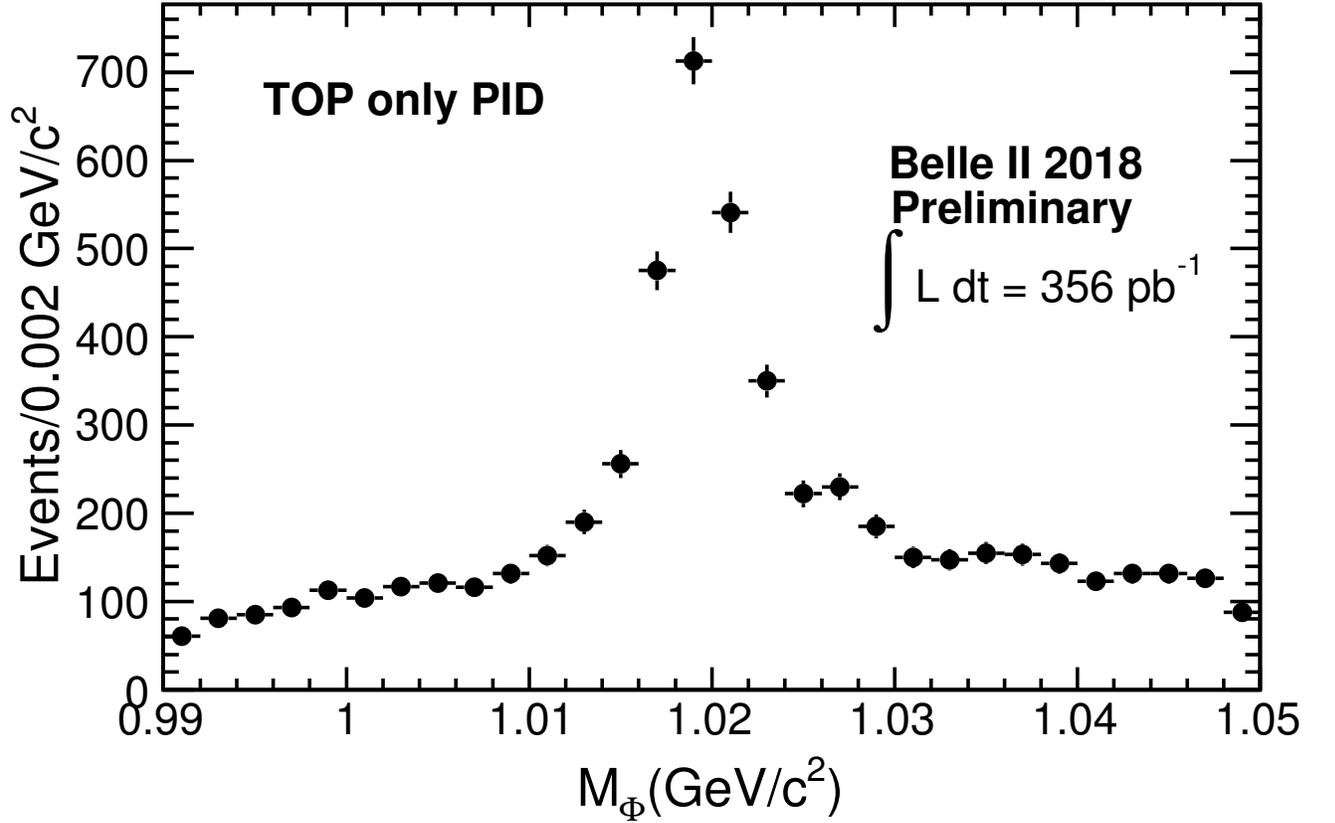


FIG. 4: This figure shows $M[(K^+K^-)]$ distribution, which was produced using phase-II 356 pb^{-1} prod6 hadron skim data. **TOP only PID criteria**, $\text{Prob}(K:\pi) > 0.5$ is applied on both K^\pm tracks. A clear peak around ϕ mass is visible. Selection criteria used for reconstruction are $|d_0| < 2\text{cm}$, $|dz| < 4\text{cm}$, $|M(K^+K^-) - M_\phi^{\text{PDG}}| < 0.050 \text{ GeV}/c^2$ and vertex fit using two charged kaon tracks. Further details are described in the internal note - BELLE2-NOTE-PH-2018-037.

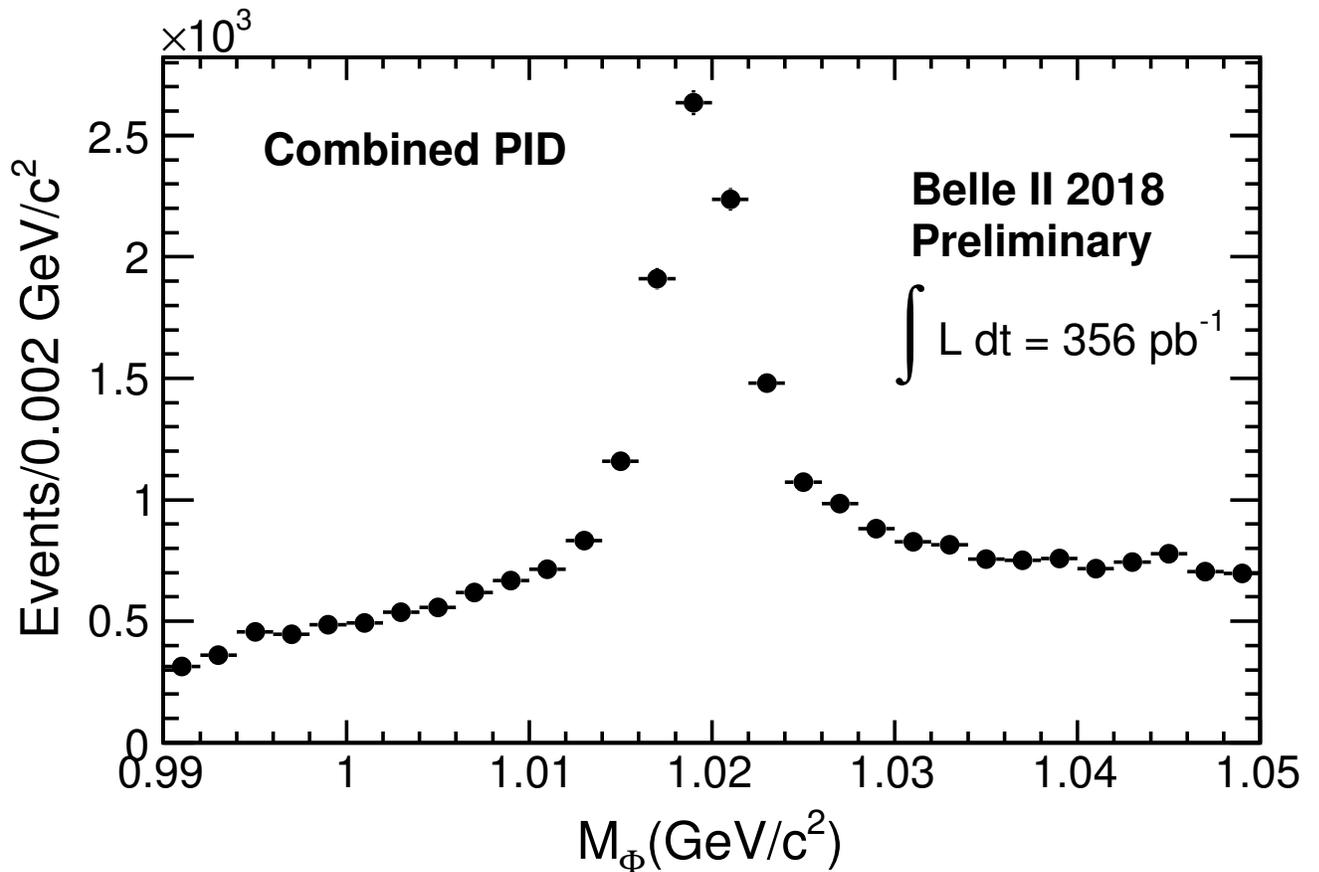


FIG. 5: This figure shows $M[(K^+K^-)]$ distribution, which was produced using phase-II 356 pb^{-1} prod6 hadron skim data. **Combined PID criteria**, $\text{Prob}(K:\pi) > 0.5$ is applied on both K^\pm tracks. A clear peak around ϕ mass is visible. Selection criteria used for reconstruction are $|d_0| < 2\text{cm}$, $|dz| < 4\text{cm}$, $|M(K^+K^-) - M_\phi^{\text{PDG}}| < 0.050 \text{ GeV}/c^2$ and vertex fit using two charged kaon tracks. Further details are described in the internal note - BELLE2-NOTE-PH-2018-037.