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 \(|d_0| < 2\text{cm}, |dz| < 4\text{ cm}, |M(K^+K^-) - M^\text{PDG}_\phi| < 0.050 \text{ GeV/c}^2\) 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 $|d0| < 2$ cm, $|dz| < 4$ cm, $|M(K^+K^-) - M_{\phi}^{PDG}| < 0.050$ 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 $\phi$ mass is visible. Selection criteria used for reconstruction are $|d0| < 2\text{cm}$, $|dz| < 4\text{ cm}$, $|M(K^+K^-) - M_{\phi}^{\text{PDG}}| < 0.050 \text{ GeV}/c^2$ 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**, Prob(K:\pi) >0.5 is applied on both $K^\pm$ tracks. A clear peak around $\phi$ mass is visible. Selection criteria used for reconstruction are $|d_0| < 2$ cm, $|dz| < 4$ cm, $|M(K^+K^-) - M_{\phi}^{PDG}| < 0.050$ GeV/c$^2$ and vertex fit using two charged kaon tracks. Further details are described in the internal note - BELLE2-NOTE-PH-2018-037.