

2  
3  
4  
1



BELLE2-NOTE-PH-XXXX-XX

Version 1.0

December 10, 2020

## 5 **Displaced vertex reconstruction at Belle II: approved plots**

6 The Belle II Collaboration

This note contains approved plots for displaced vertex reconstruction at Belle II, using an integrated luminosity of  $72.05 \text{ fb}^{-1}$ . Details of the analysis are documented in the supporting physics note BELLE2-NOTE-PH-2020-072.

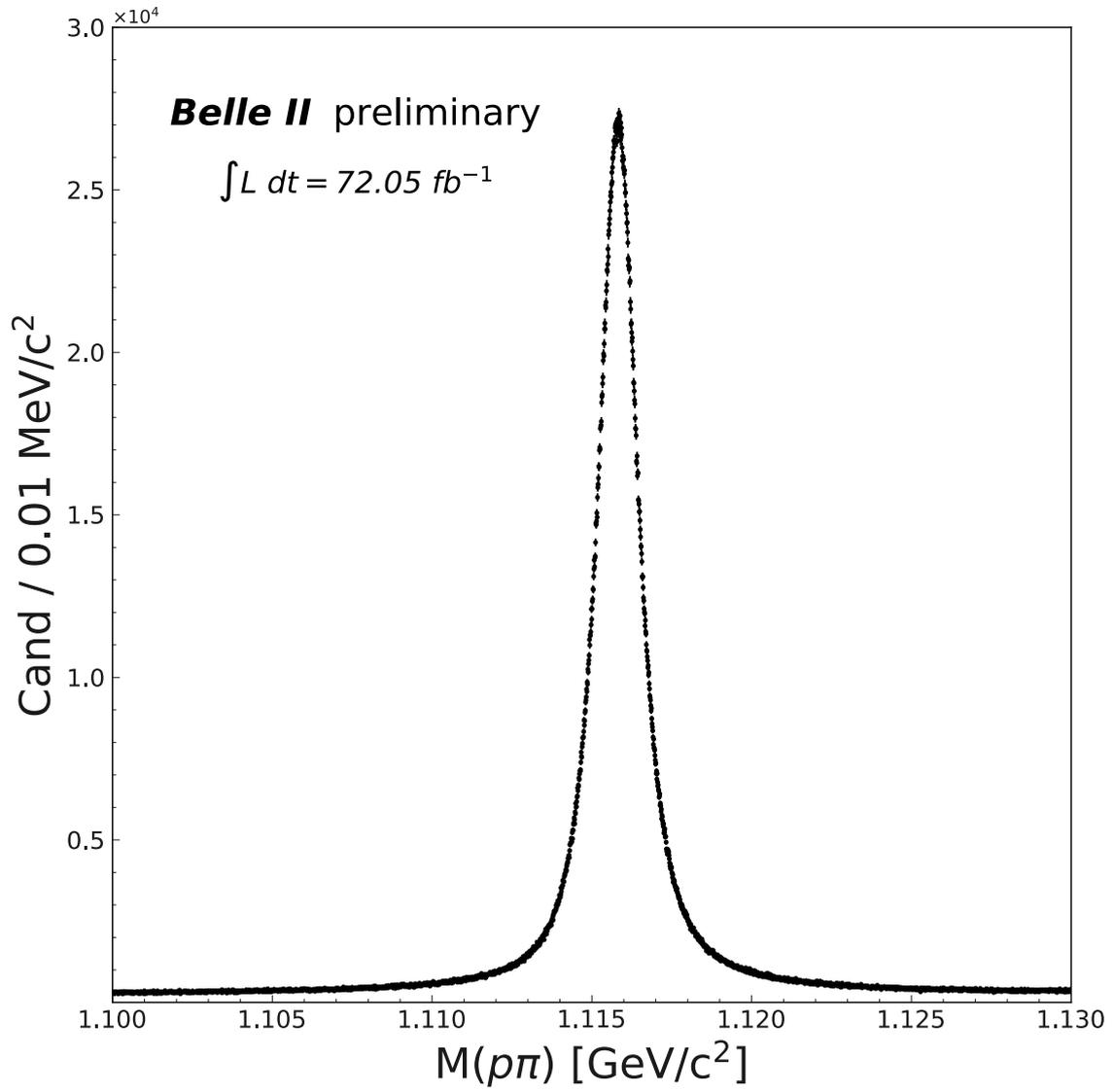


FIG. 1:  $p\pi$  invariant mass distribution of a  $\Lambda$  inclusive sample with Belle II data. The complete selection criteria is described in the supporting physics note BELLE2-NOTE-PH-2020-072.

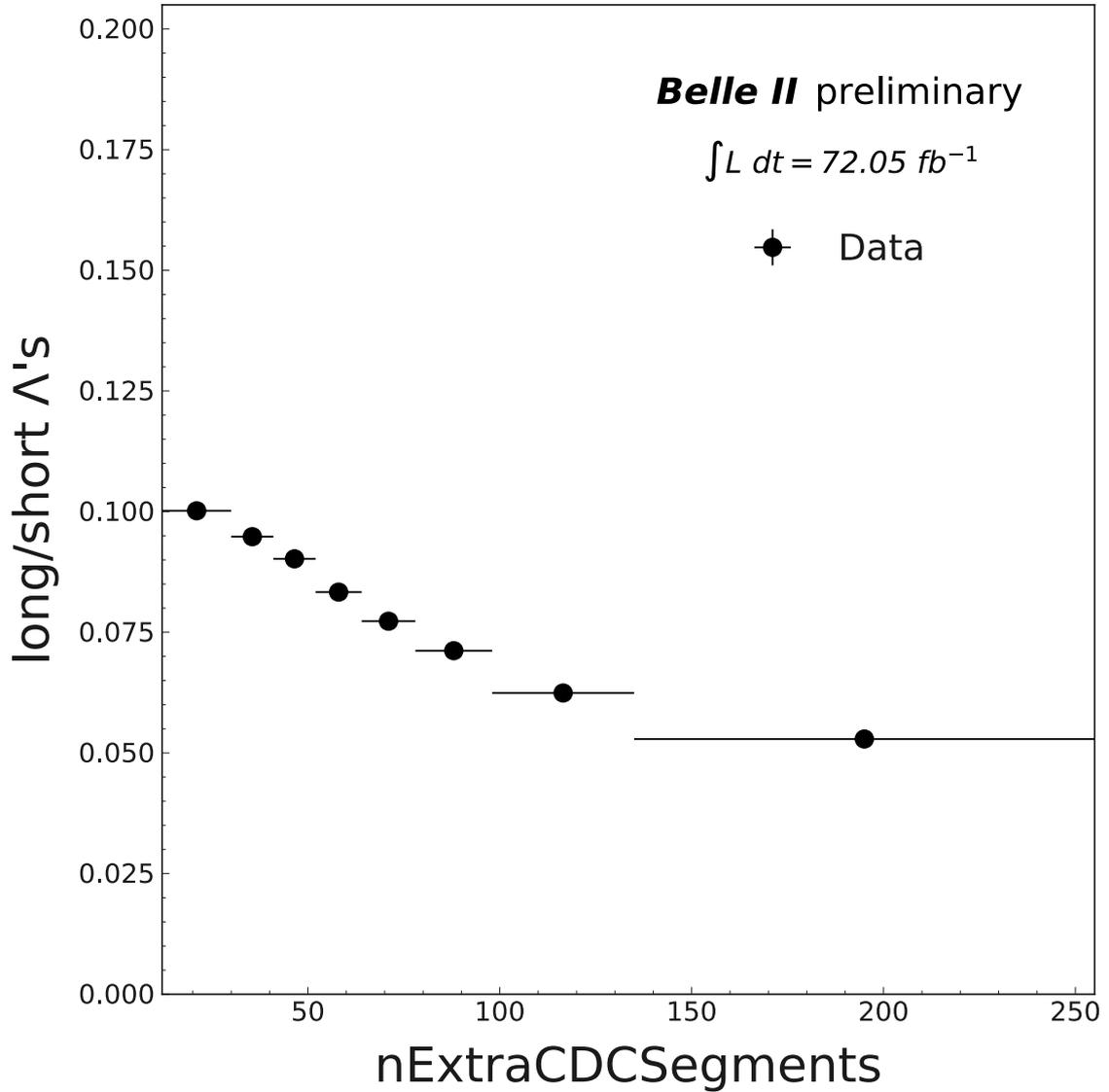


FIG. 2: Ratio between the number of long and short signal  $\Lambda$  as a function of the number of extra CDC Segments. The data refer to the same inclusive  $\Lambda$  sample showed in Fig. 1. In order to count the number of signal candidates, we use a sideband subtraction approach. Signal  $\Lambda$  with xy-distance  $< 15$  cm are labeled as short, while signal  $\Lambda$  with xy-distance  $\geq 15$  cm are labeled as long. The number of extra CDC segments ( $nExtraCDCSegments$ ) is an event-based variable available in *basf2*, and describes the number of segments reconstructed using CDC information and not assigned to any of the tracks of the event.