

# Supplemental material

## A Distribution of $\chi_{\text{Match}}^2$

The distributions of the  $\chi_{\text{Match}}^2$  variable, introduced in Sec. 3.2, are shown in Fig. 9. The selection only considers matches up to  $\chi_{\text{Match}}^2 = 48$ .

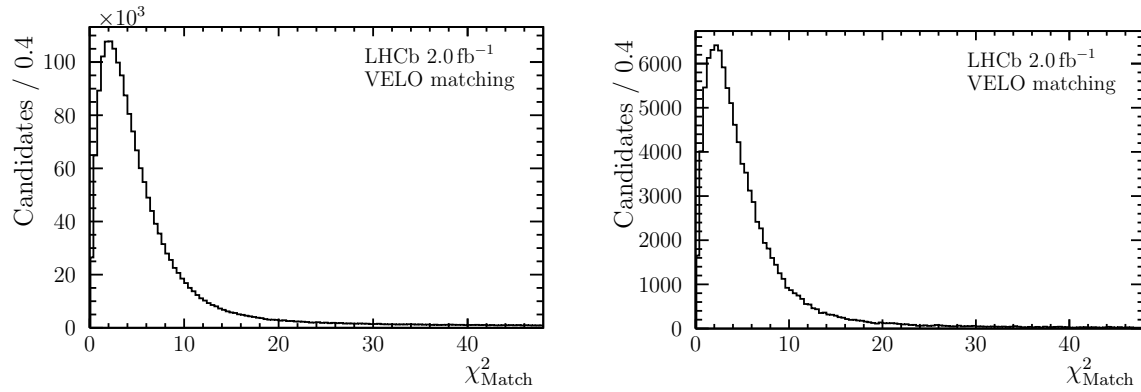


Figure 9: Distributions of  $\chi_{\text{Match}}^2$  for data corresponding to (left) the online selection, as introduced in Fig. 4, and (right) the offline selection, as introduced in Fig. 5. No significant differences between the two distributions are expected, since the purity of  $\Xi^-$  candidates entering the selection are similar, while the background in Fig. 4 mainly comes from combinations of a real  $\Xi^-$  baryons with random pions.