

Figure 1: The missing mass histogram in the topology  $\gamma p \rightarrow p \pi^+(\pi^-)$  and butanol target. The unit of the X-axis is  $\text{GeV}^2$ . (Left) The red line is made before applying the eloss correction. The green part and black dot line is made after applying the eloss correction. The green part has also the KinFit Cut. (Right) The gaussian fit is applied to the green part. The mean value in this fit is  $0.0203 \text{ GeV}^2$ . The missing mass of  $\pi^-$  is  $142 \text{ MeV}$ . The mass of real  $\pi^-$  is  $139.5 \text{ MeV}$ .

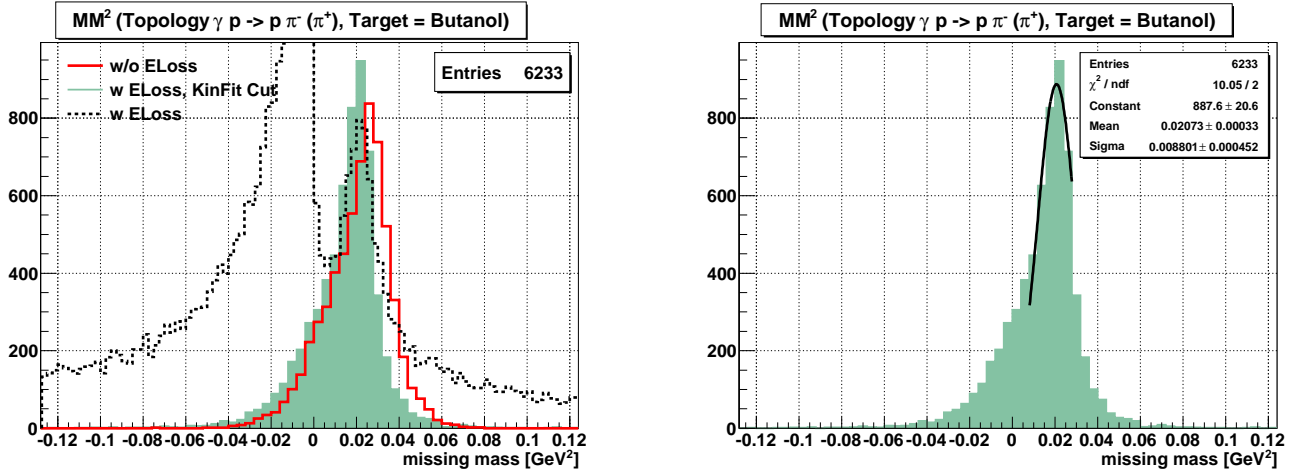


Figure 2: The missing mass histogram in the topology  $\gamma p \rightarrow p \pi^-(\pi^+)$  and butanol target. The unit of the X-axis is  $\text{GeV}^2$ . (Left) The red line is made before applying the eloss correction. The green part and black dot line is made after applying the eloss correction. The green part has also the KinFit Cut. (Right) The gaussian fit is applied to the green part. The mean value in this fit is  $0.0207 \text{ GeV}^2$ . The missing mass of  $\pi^-$  is  $144 \text{ MeV}$ . The mass of real  $\pi^-$  is  $139.5 \text{ MeV}$ .

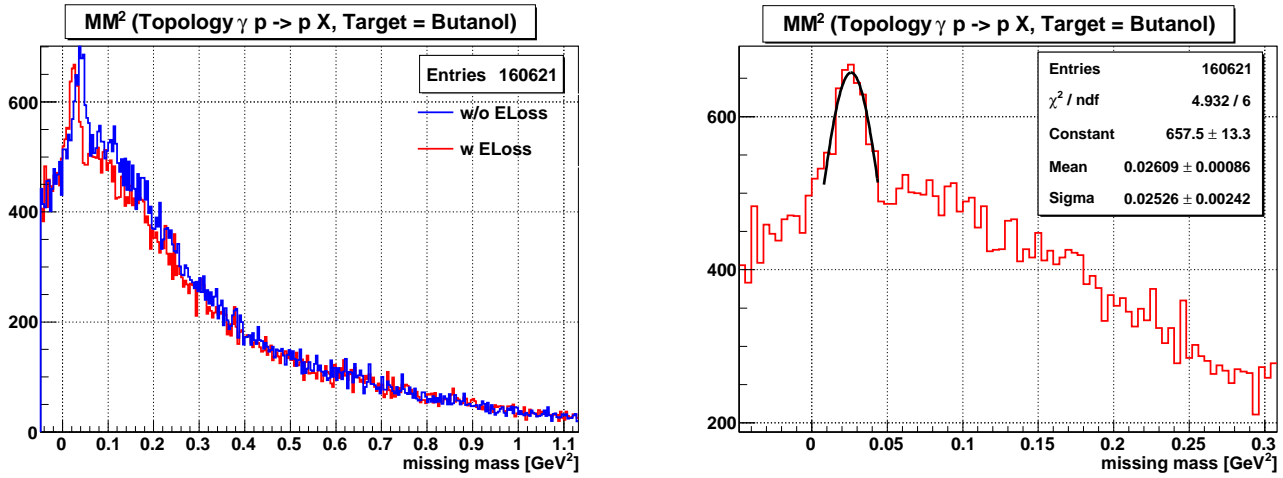


Figure 3: The missing mass histogram in the topology  $\gamma p \rightarrow p X$  and butanol target. The unit of the X-axis is GeV<sup>2</sup>. (Left) The blue line is made before applying the eLoss correction. The red line is made after applying the eLoss correction. (Right) The gaussian fit is applied to the red line. The mean value in this fit is 0.0261 GeV<sup>2</sup>. The missing mass of  $\pi^0$  is 162 MeV. The mass of real  $\pi^0$  is 135 MeV.