

Weekly Update 7 & 8

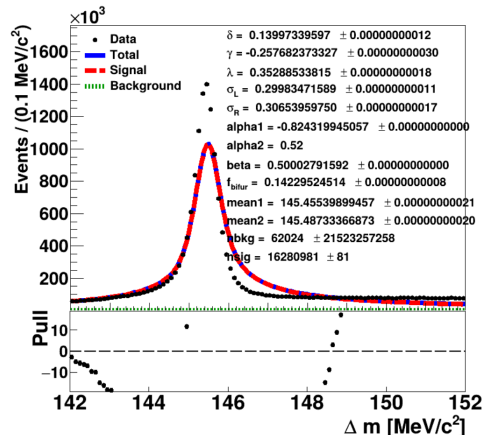
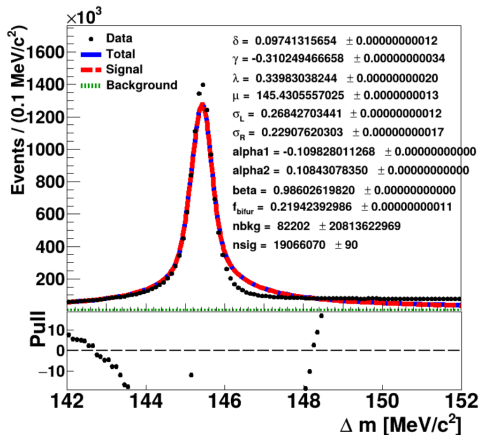
Edward Wardell

26th February - 5th March 2025

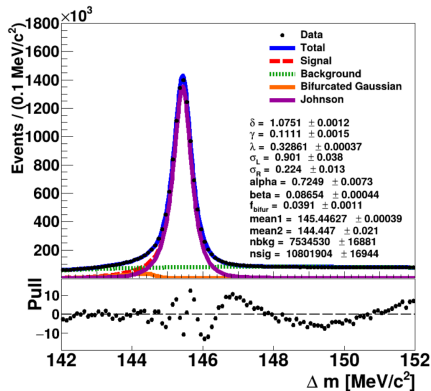
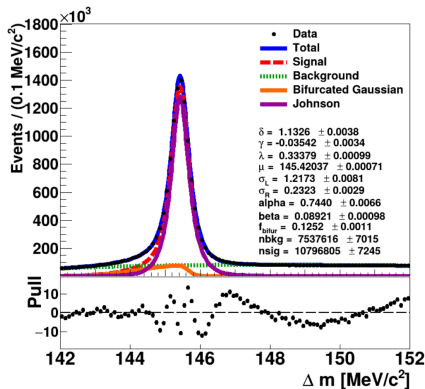
Tasks Undertaken

- ▶ Mass Fitting 2015 MagDown data with no Offline quality selection criteria applied.

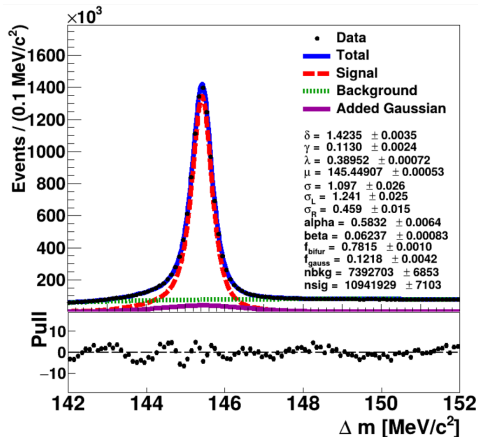
RS - 1D Mass fits - Power Law Background - split mean (right)



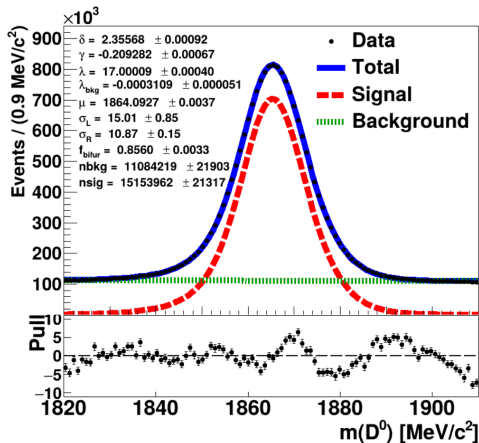
RS - 1D Mass fits - $(\Delta m - 139.5 \text{ MeV})^\alpha e^{-\beta(\Delta m - 139.5 \text{ MeV})}$ background - split mean (right)



RS - 1D Mass fits - Added Gaussian to Signal

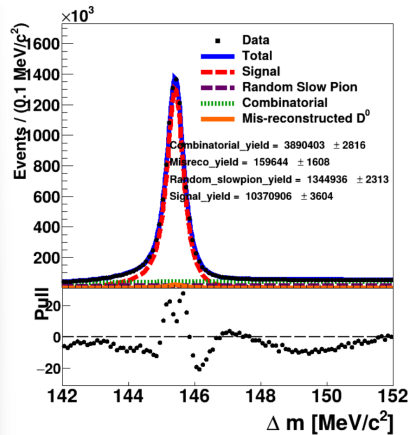
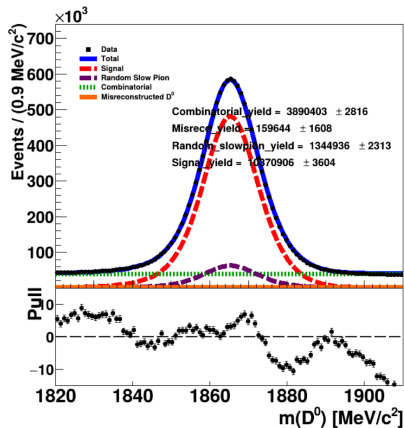


RS - 1D Mass fits (Dst_ReFit_D0_M_best)

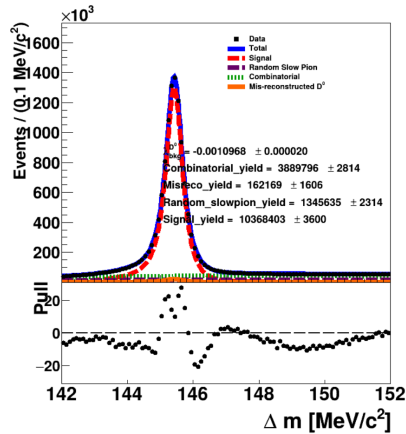
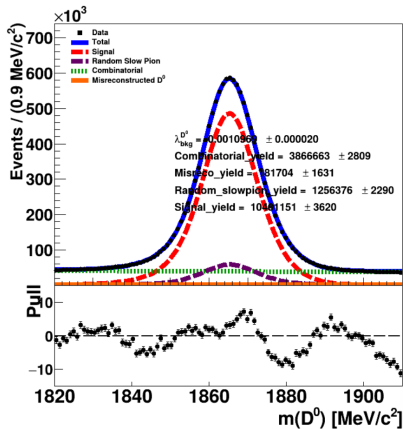


First the 2D Mass Fits without the additional Gauss investigated

RS - 2D Mass Fit - Standard

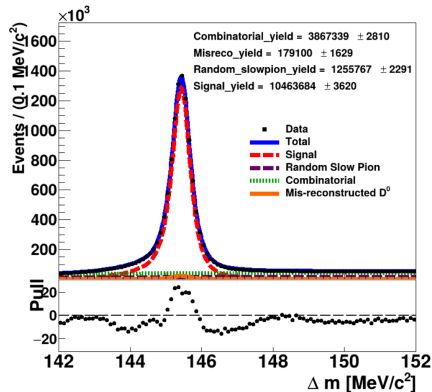
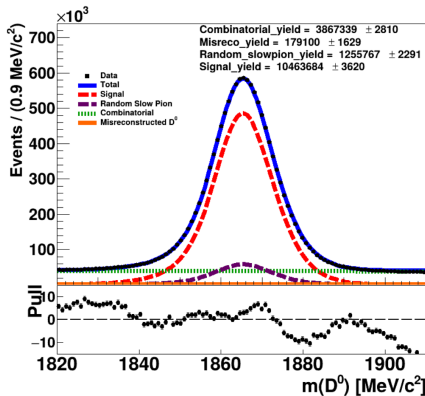


RS - 2D Mass Fit - Fit $m(D^0)$ background

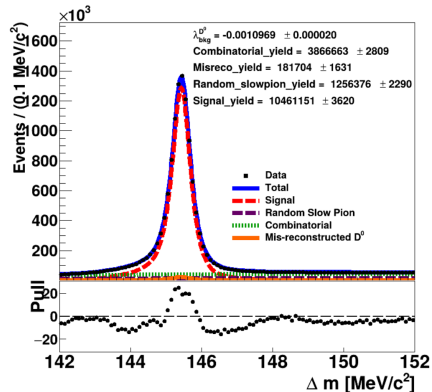
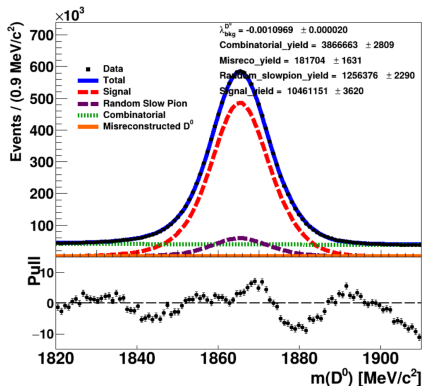


2D Mass Fits with the additional Gauss in 1D Δm fit

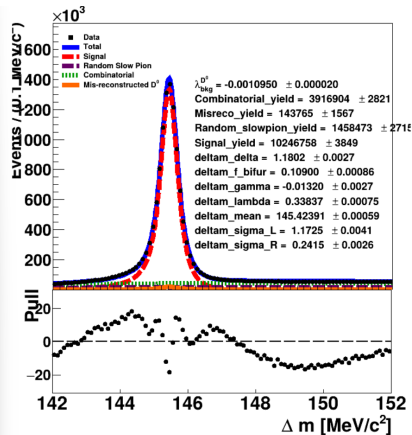
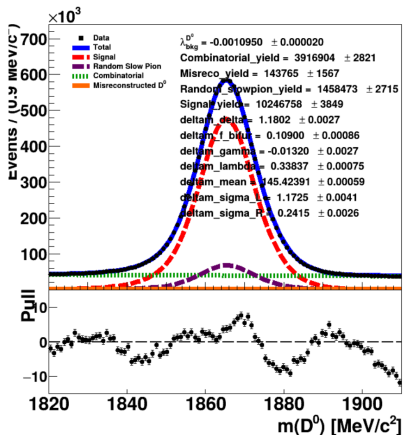
RS - 2D Mass Fit



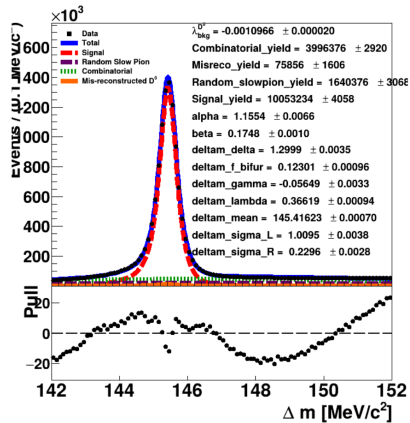
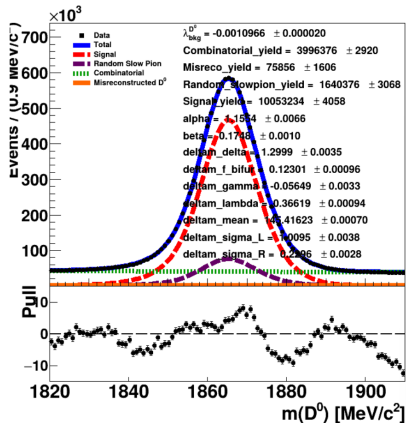
RS - 2D Mass fits - Fitting $m(D^0)$ background parameter



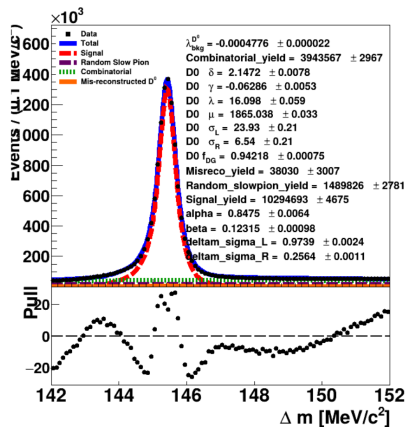
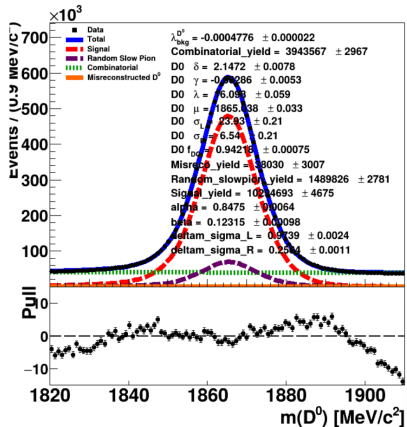
RS - 2D Mass fits - $m(D^0)$ background and Δm background



RS - 2D Mass fits - $m(D^0)$ background, Δm background and signal



RS - 2D Mass fits - $m(D^0)$ signal and background, with Δm signal widths



WS fits

1D Mass Fits

