

PID Check of LEP Sana Ntuples

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1 Get Fitting Parameters

$$\sigma_{m^2}^2 = 4m^4 p^2 a_1^2 + 4m^4 \left(1 + \frac{m^2}{p^2} \right) a_2^2 + 4p^2 (m^2 + p^2) a_3^2 \quad (1)$$

where m is particle's mass, p is particle's momentum, (a_1 , a_2 , a_3) are fitting parameters.

- a_1 : Spectrometer resolution
- a_2 : Multiple Scattering (low momentum dominance)
- a_3 : TOF resolution (high momentum dominance)

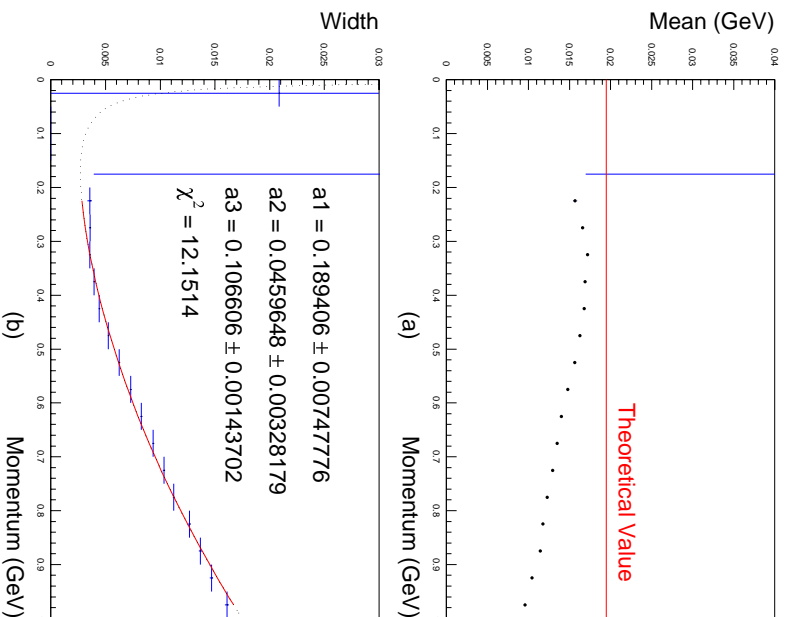


Figure 1: π

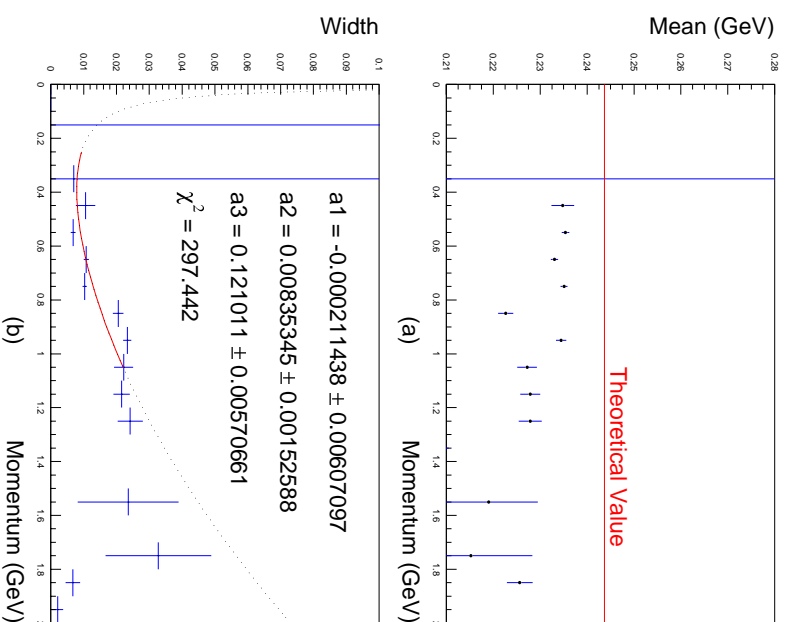


Figure 2: K

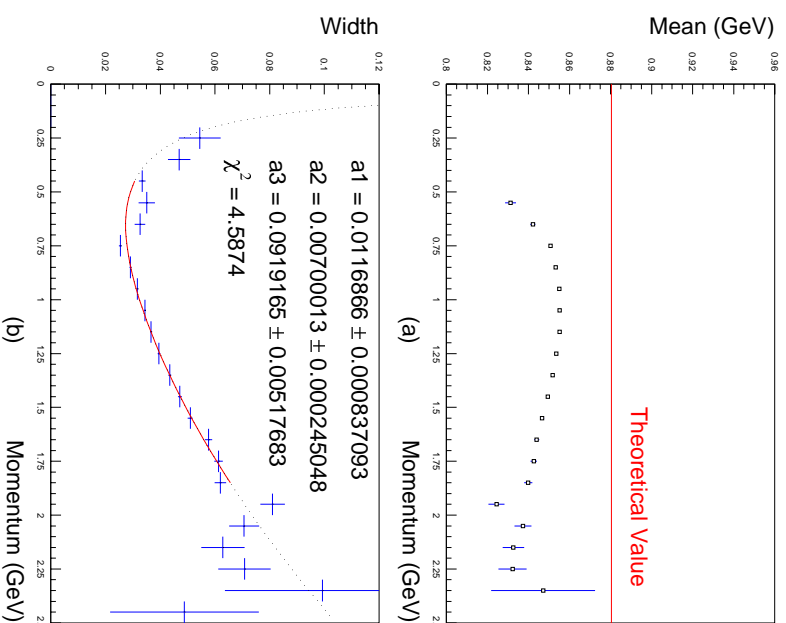


Figure 3: P

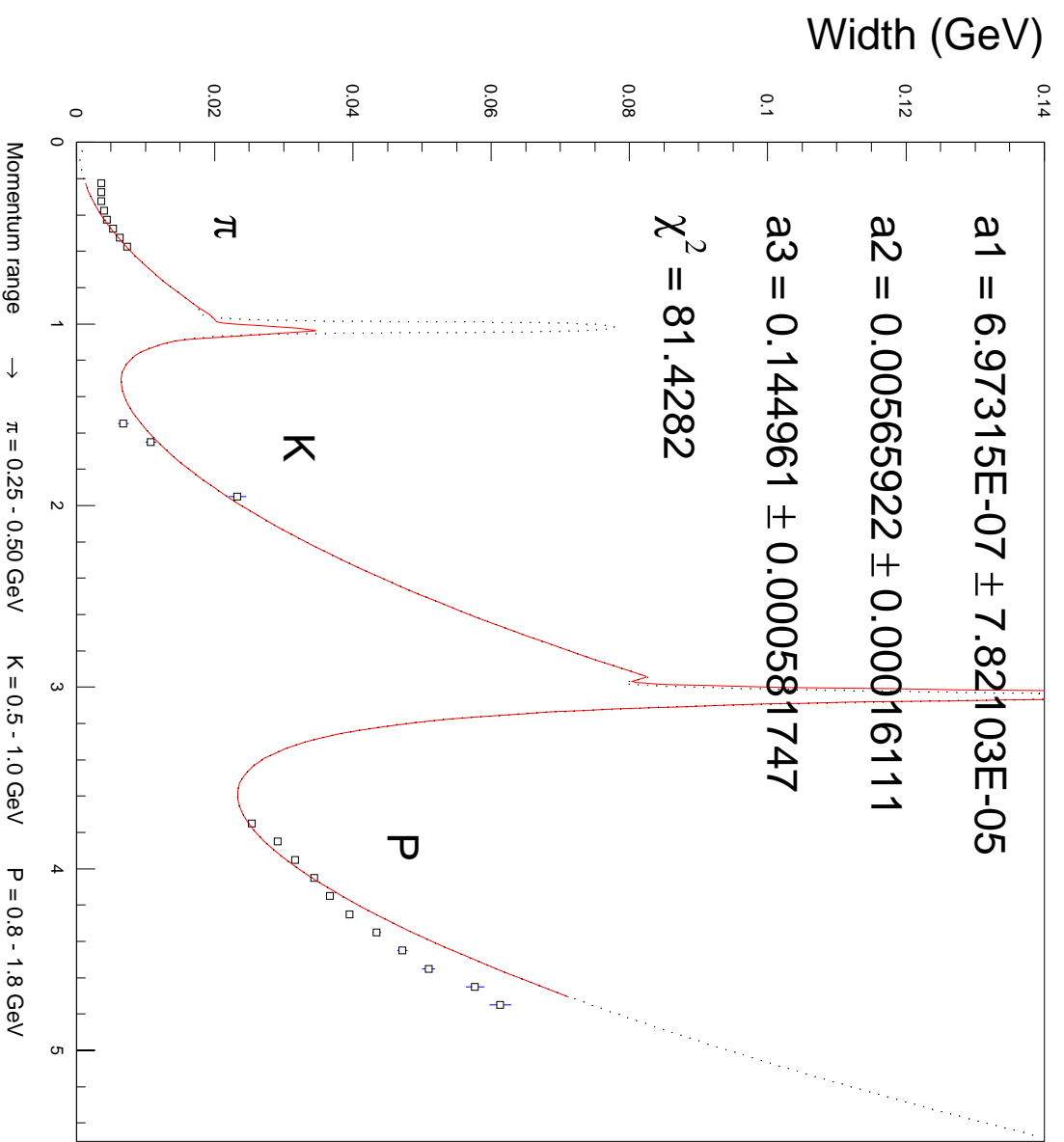


Figure 4: Common Fitting Parameters

2 PID Boundary : 2σ widths

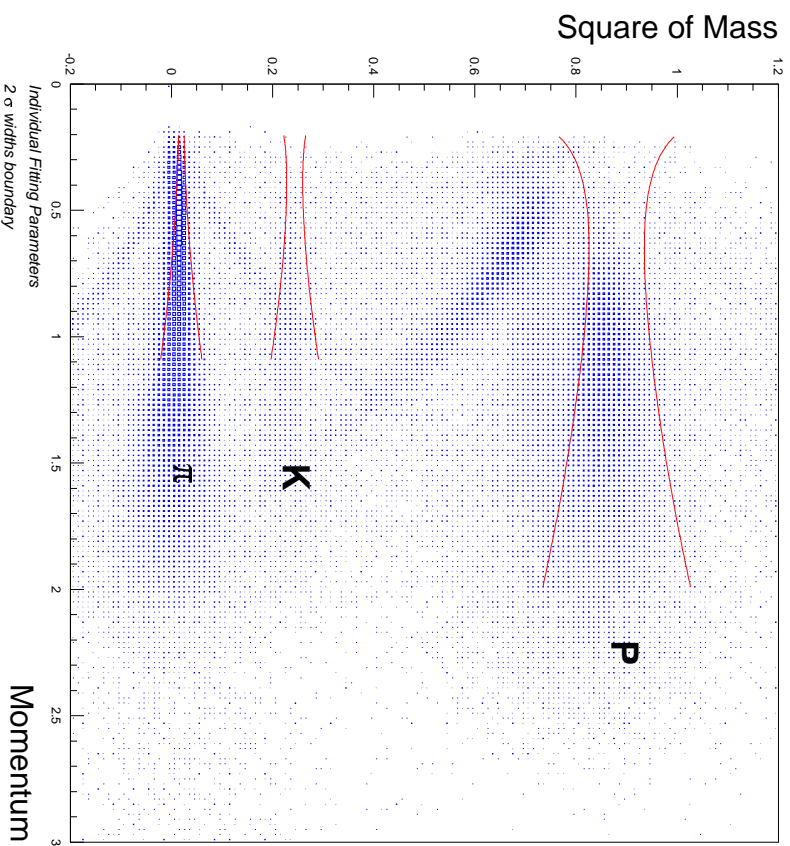


Figure 5: Individual Fitting Parameters

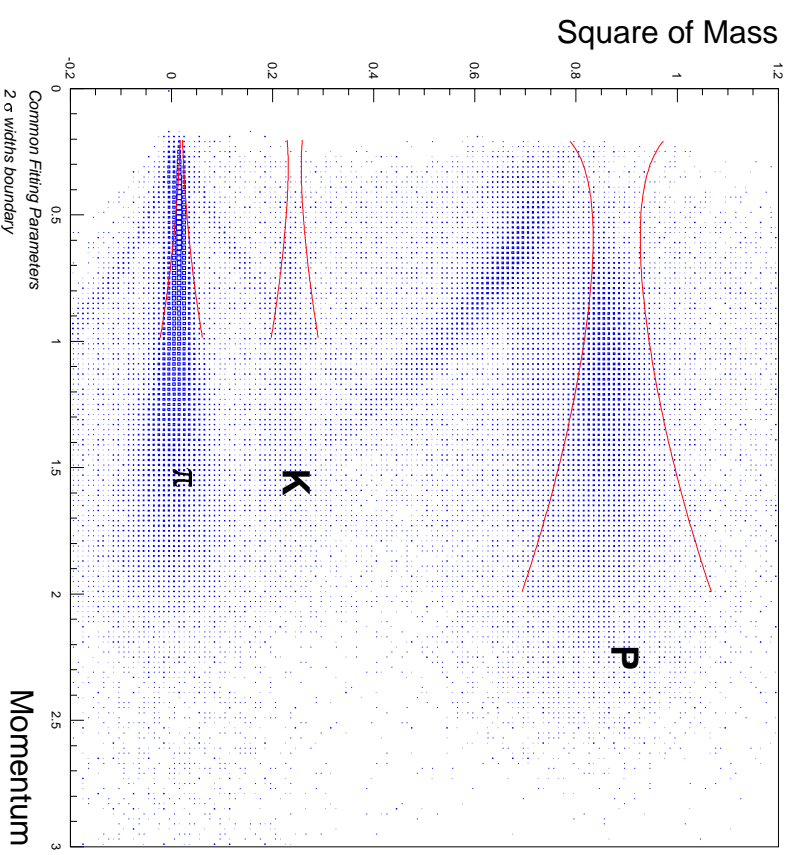


Figure 6: Common Fitting Parameters

3 PID Boundary : 5σ widths

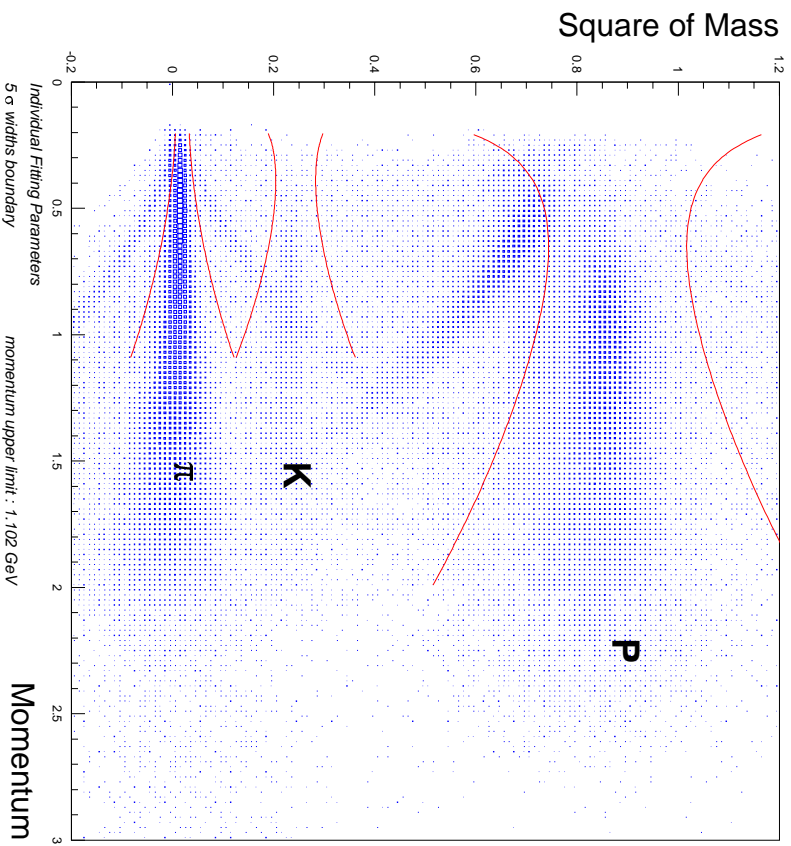


Figure 7: Individual Fitting Parameters

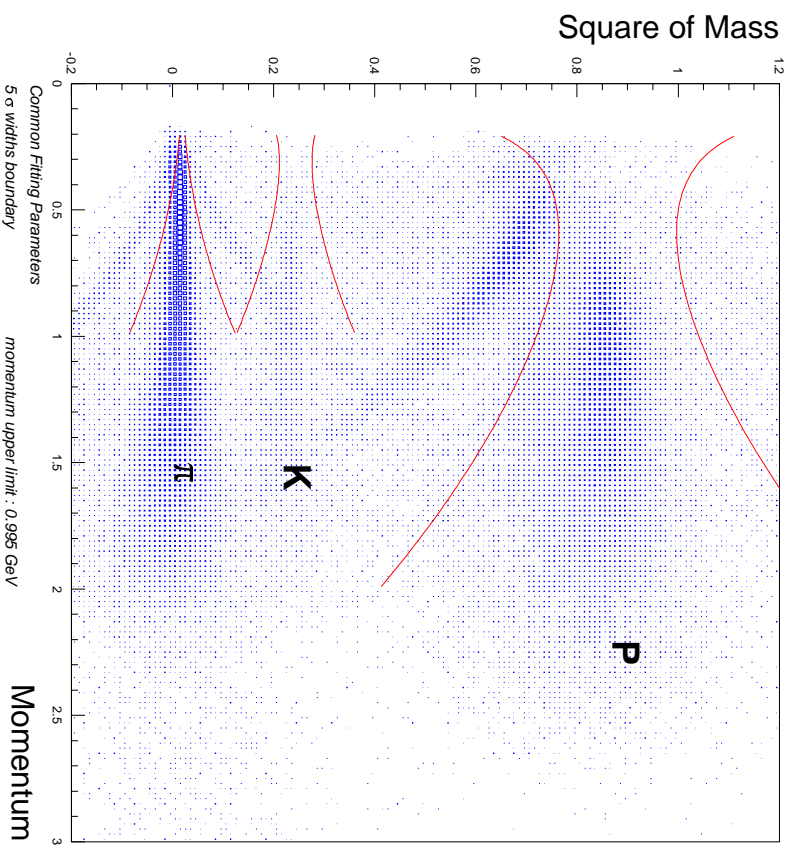


Figure 8: Common Fitting Parameters

4 Mass Peak and Mass Width

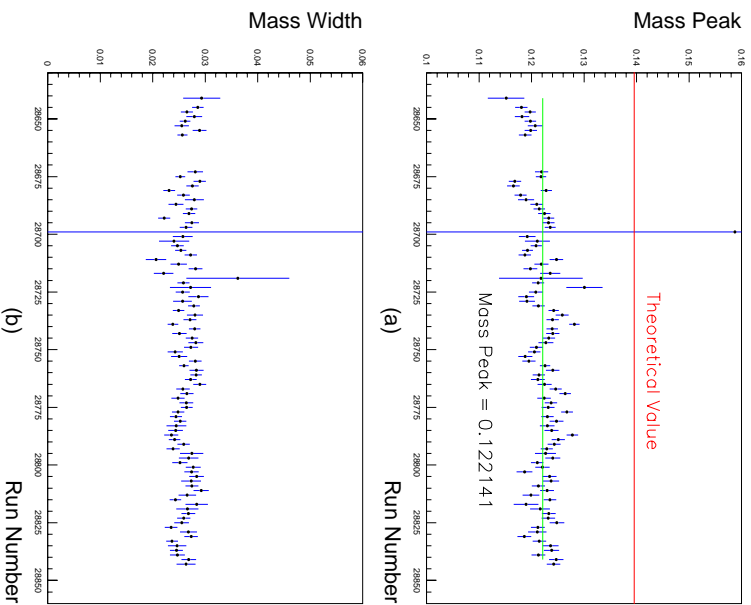


Figure 9: π^+ (2σ , Individual)

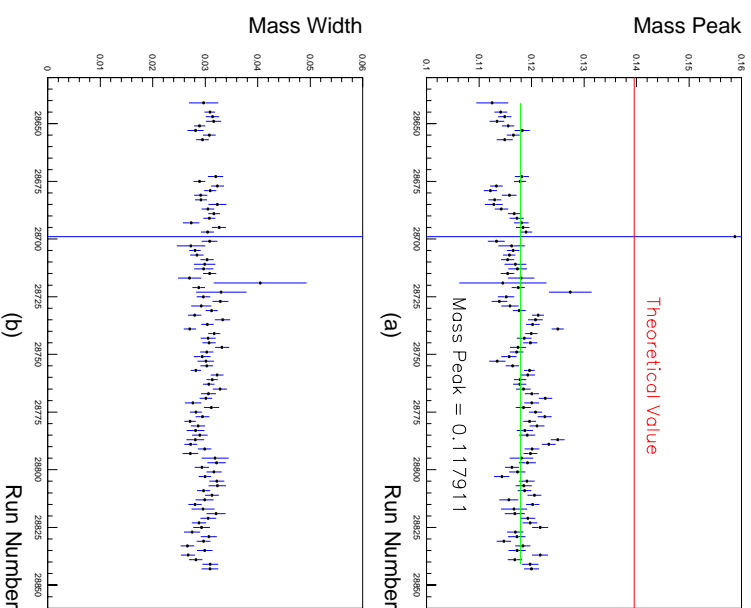


Figure 10: π^+ (5σ , Individual)

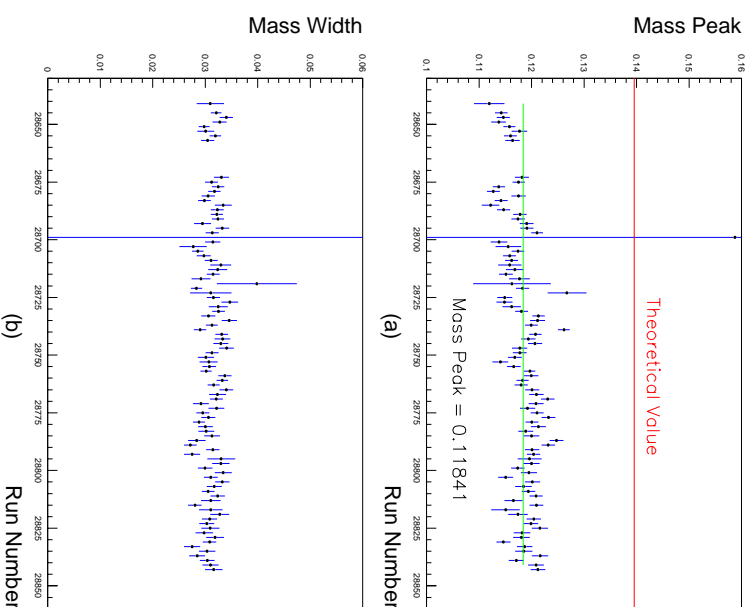


Figure 11: π^+ (5σ , Common)

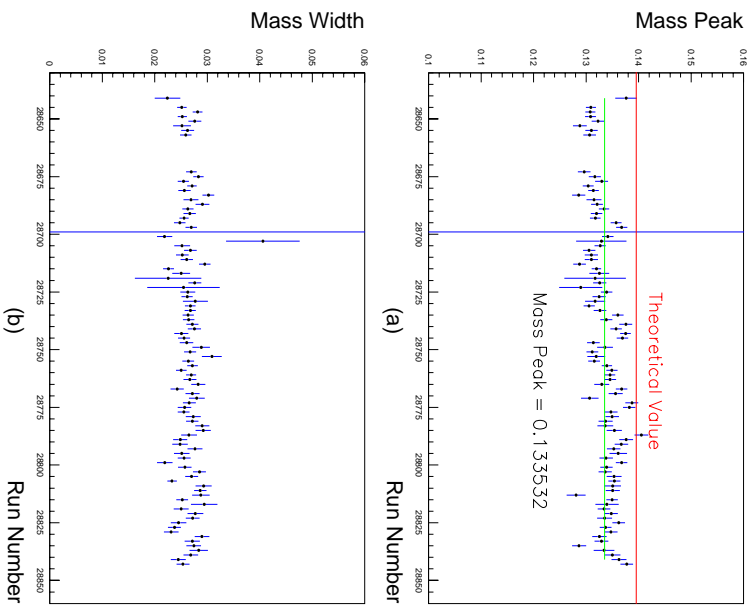


Figure 12: π^- (2σ , Individual)

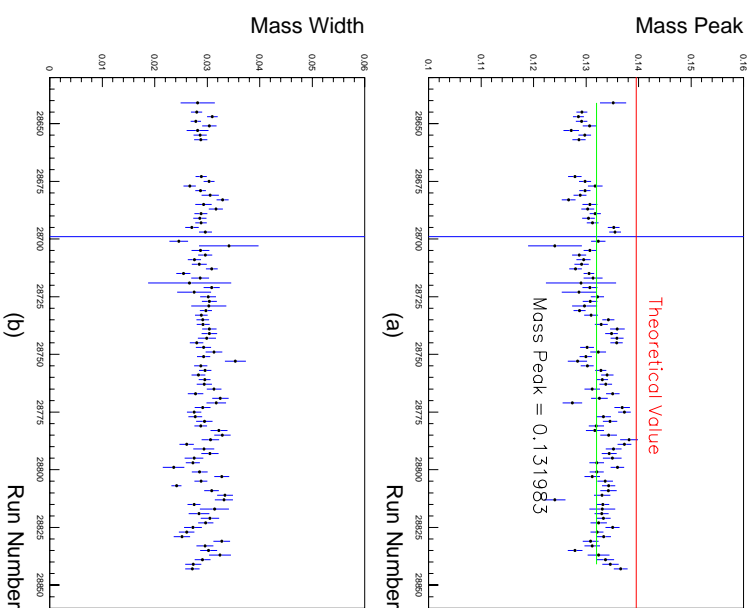


Figure 13: π^- (5σ , Individual)

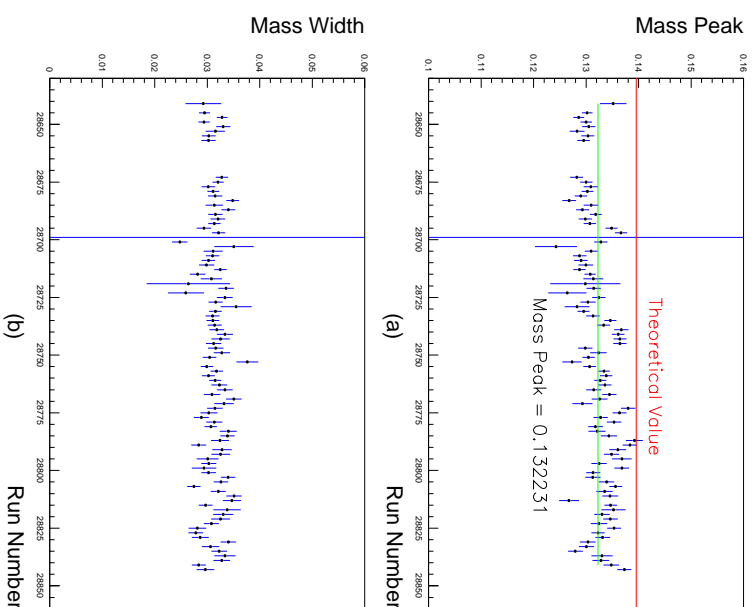


Figure 14: π^- (5σ , Common)

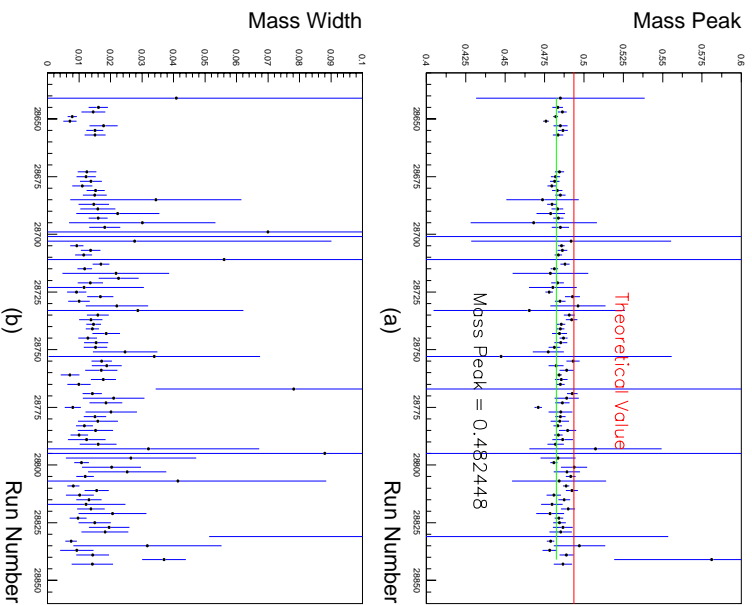


Figure 15: K^+
(2σ , Individual)

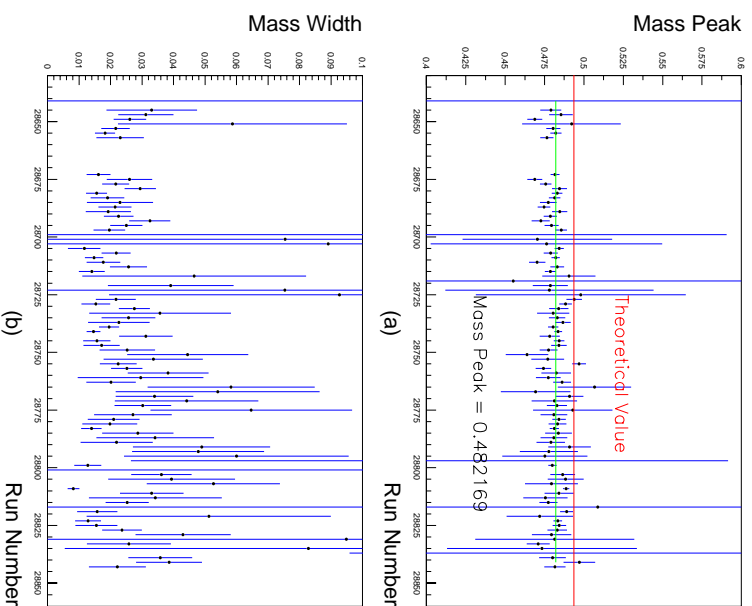


Figure 16: K^+
(5σ , Individual)

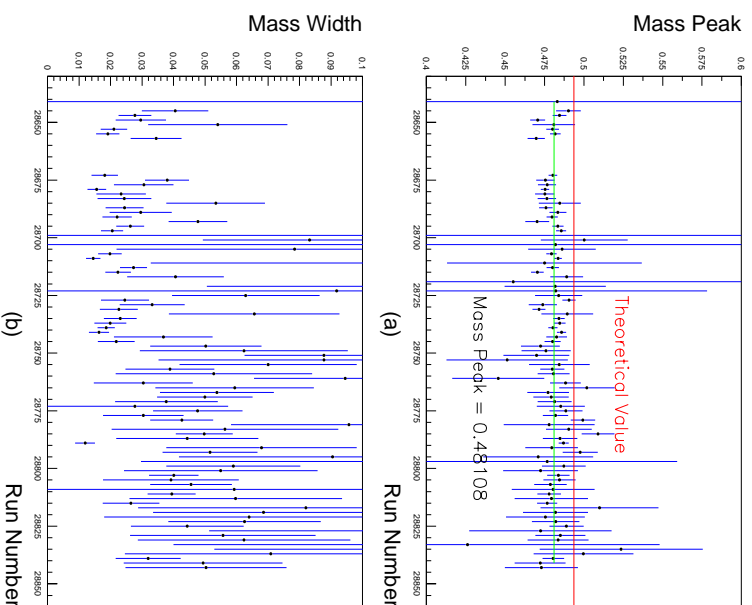


Figure 17: K^+
(5σ , Common)

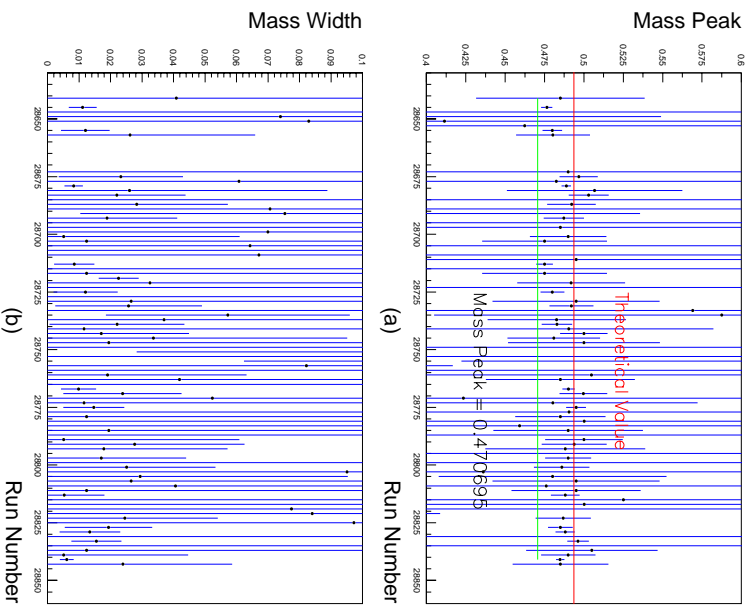


Figure 18: K^-
(2σ , Individual)

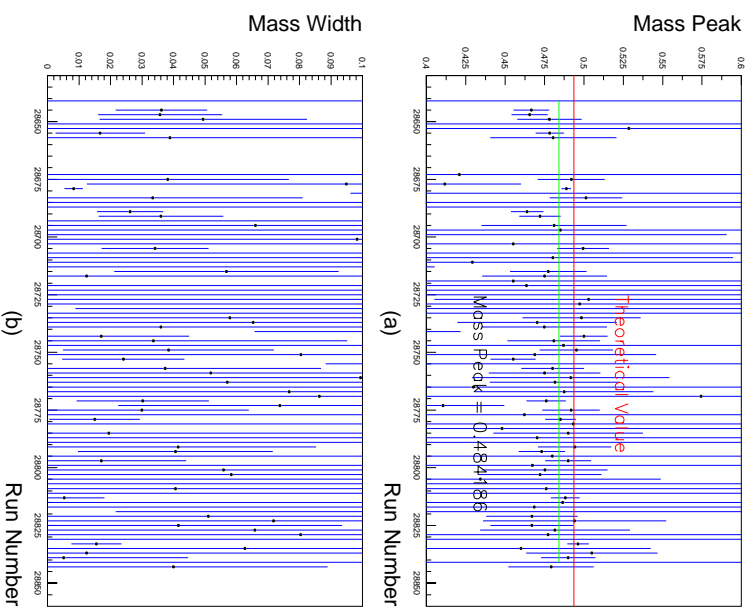


Figure 19: K^-
(5σ , Individual)

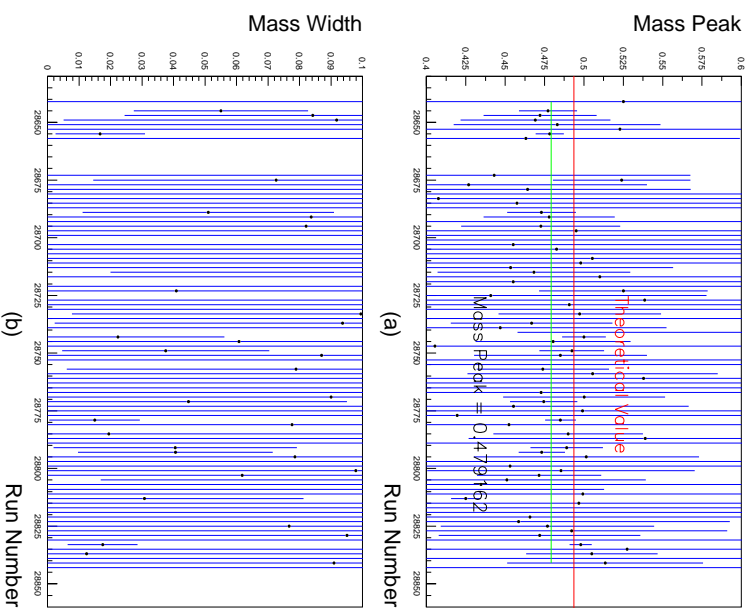


Figure 20: K^-
(5σ , Common)

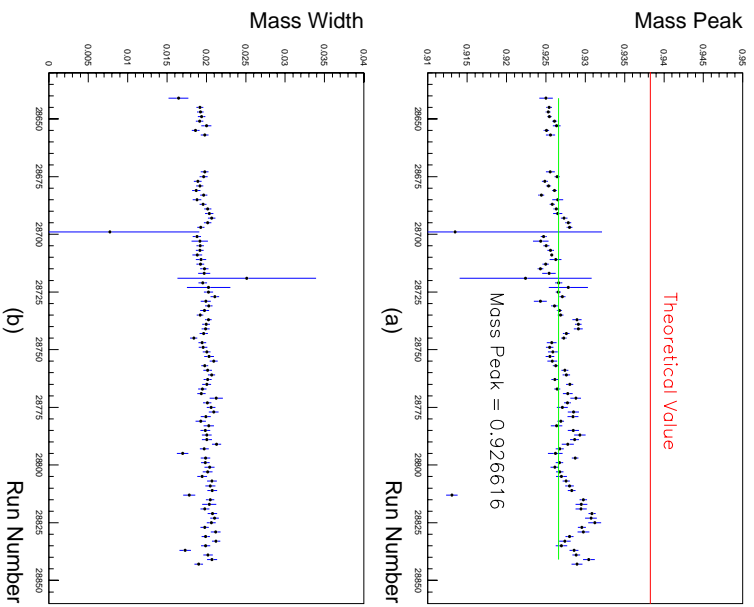


Figure 21: P (2σ , Individual)

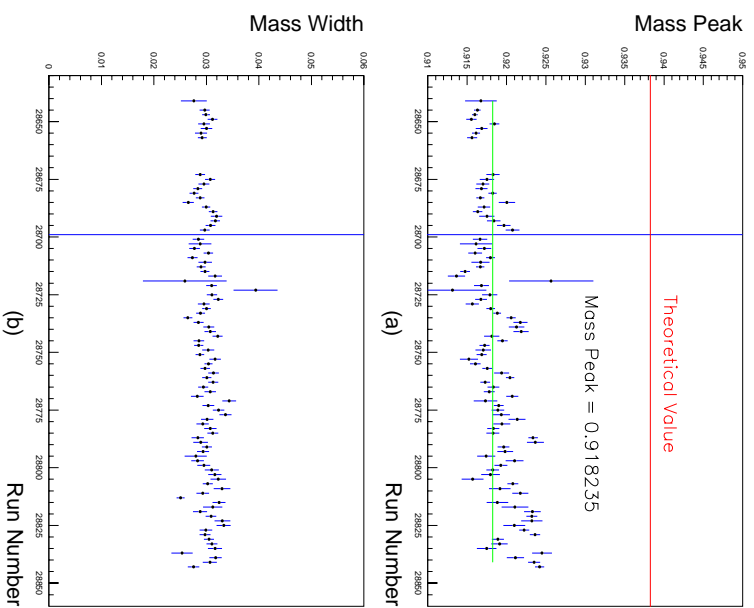


Figure 22: P (5σ , Individual)

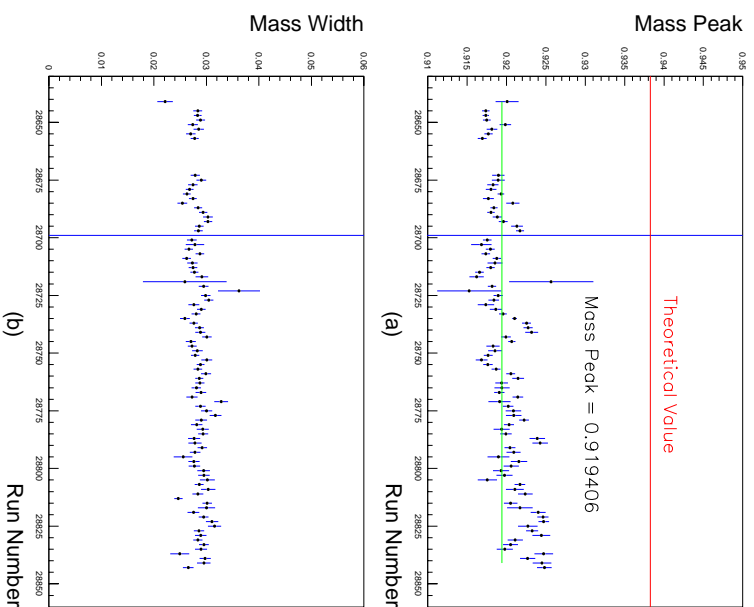


Figure 23: P (5σ , Common)

5 Normalized Yields

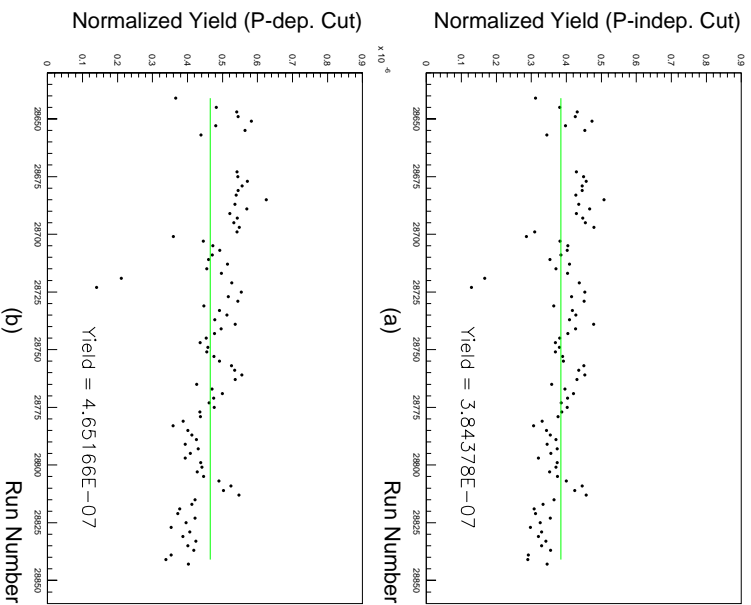


Figure 24: π^+ (2σ , Individual)

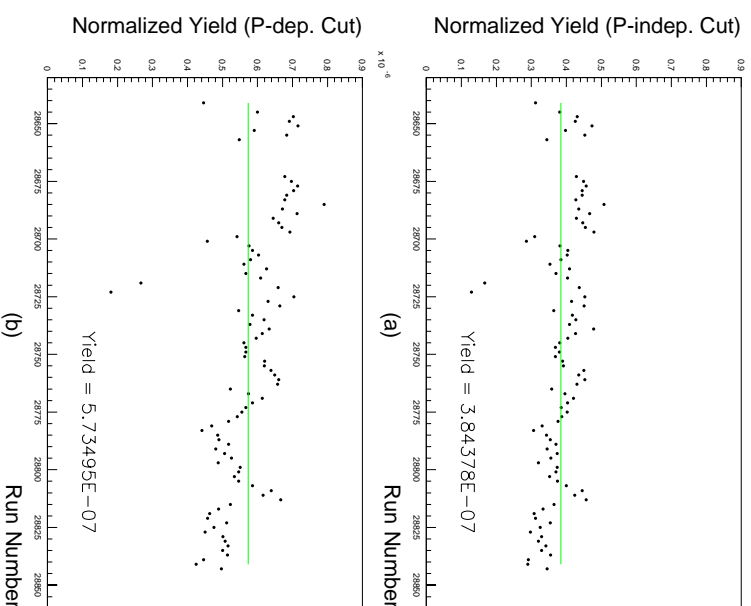


Figure 25: π^+ (5σ , Individual)

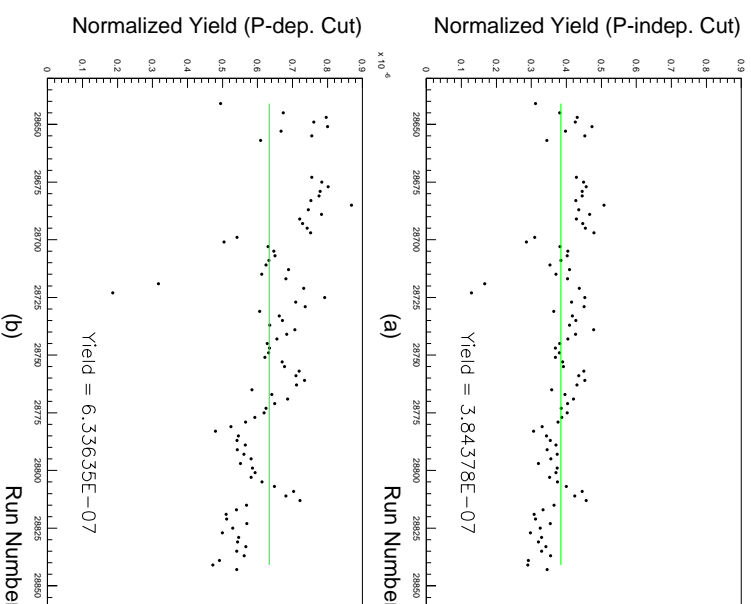


Figure 26: π^+ (5σ , Common)

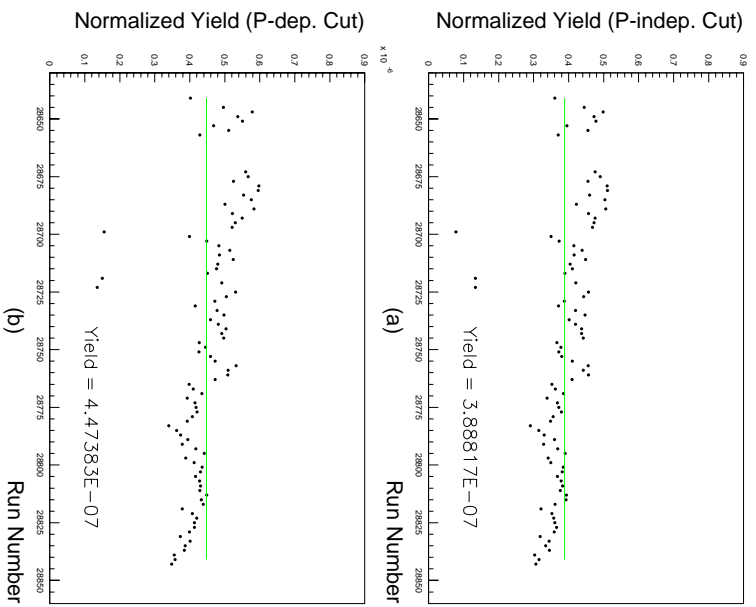


Figure 27: 2σ , Individual)

π^-

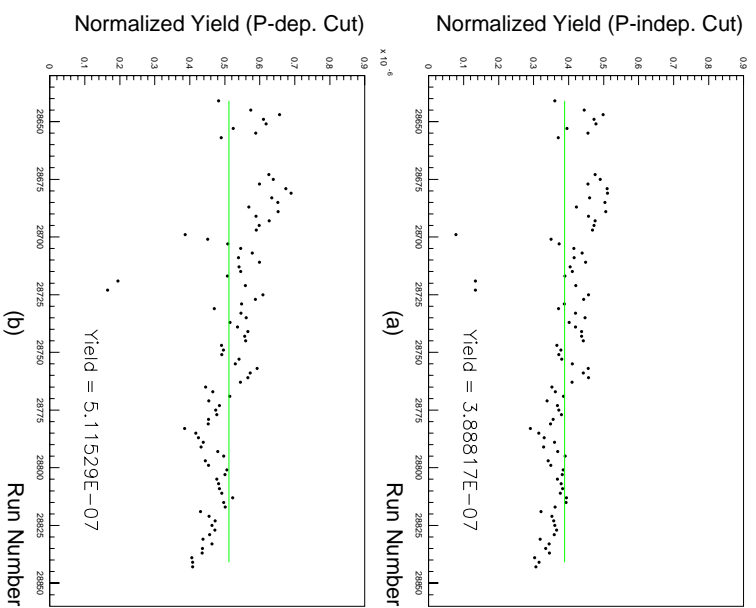


Figure 28: 5σ , Individual)

π^-

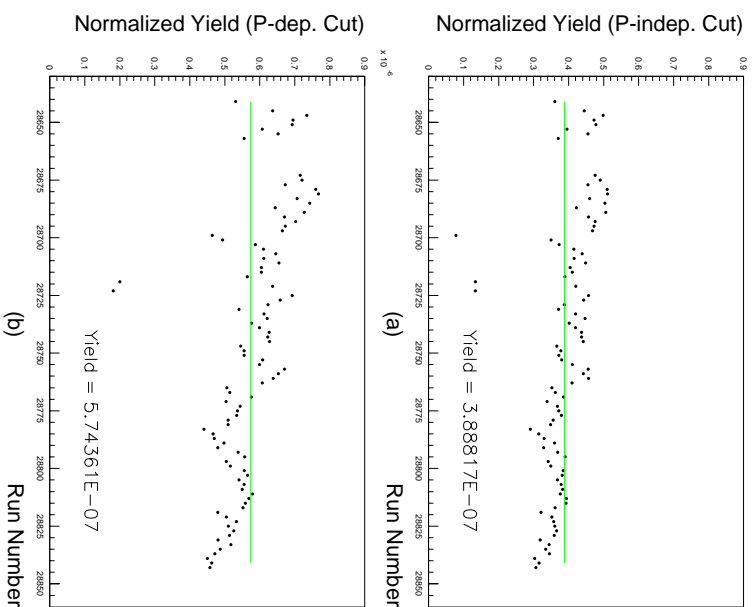


Figure 29: π^- (5σ , Common)

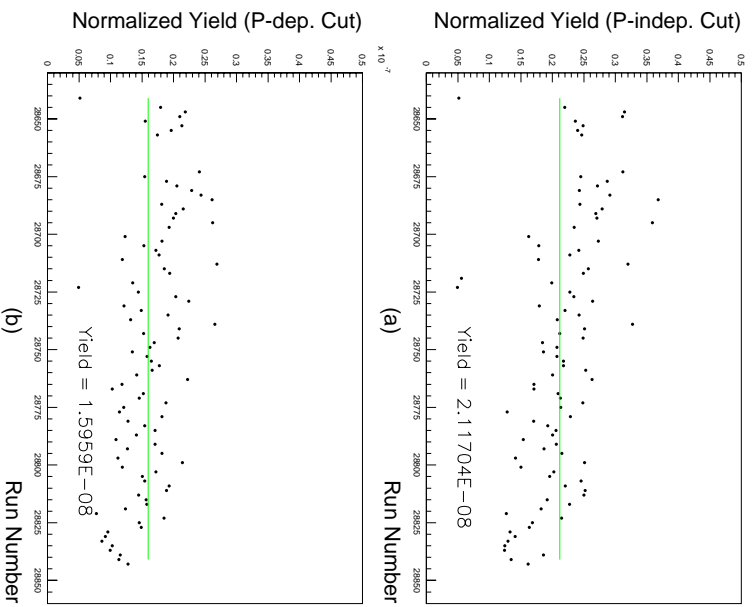


Figure 30: K^+
(2σ , Individual)

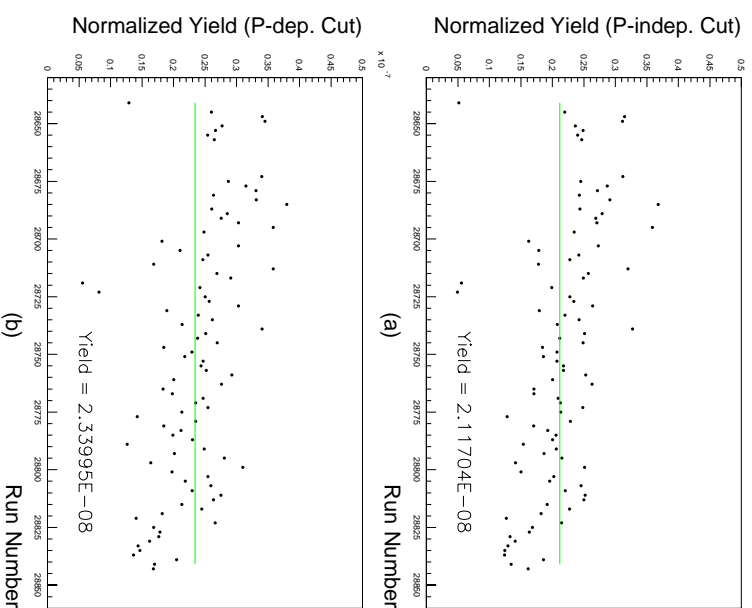


Figure 31: K^+
(5σ , Individual)

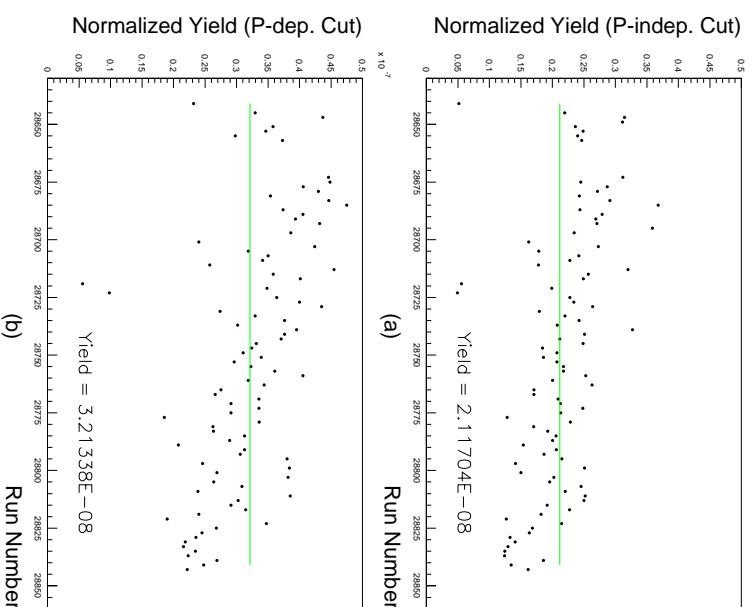


Figure 32: K^+
(5σ , Common)

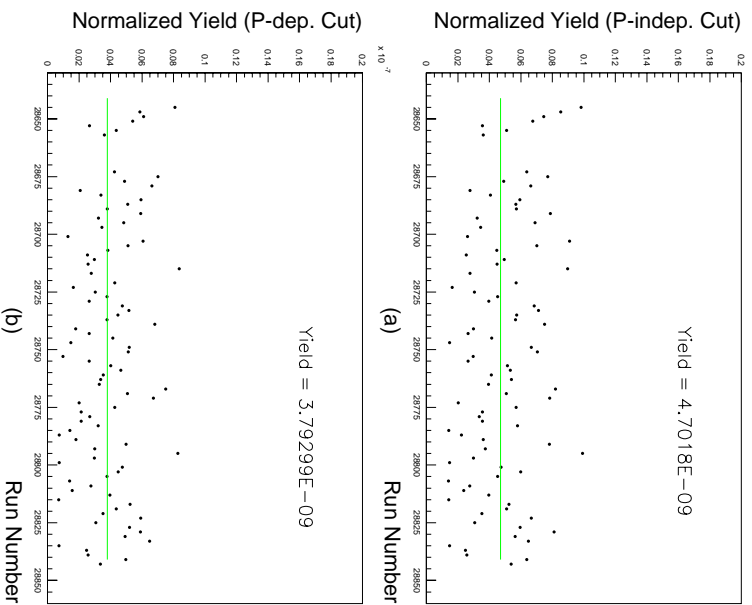


Figure 33: K^- (2σ , Individual)

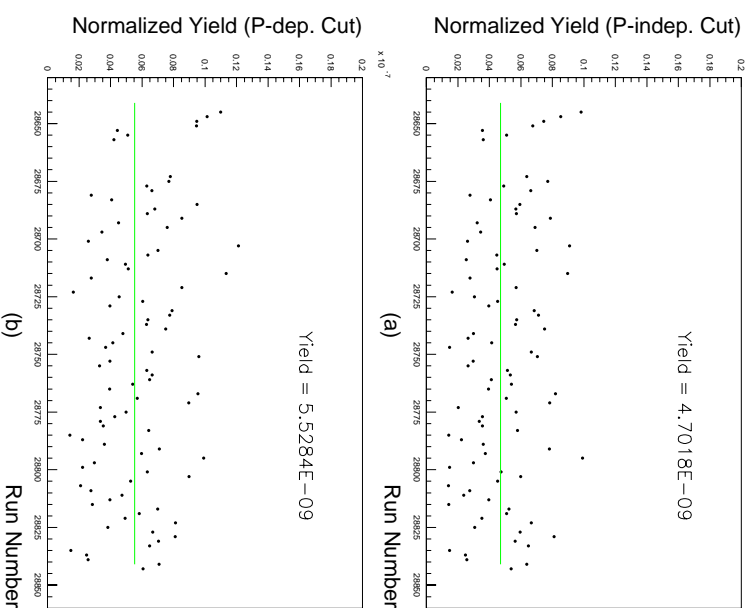


Figure 34: K^- (5σ , Individual)

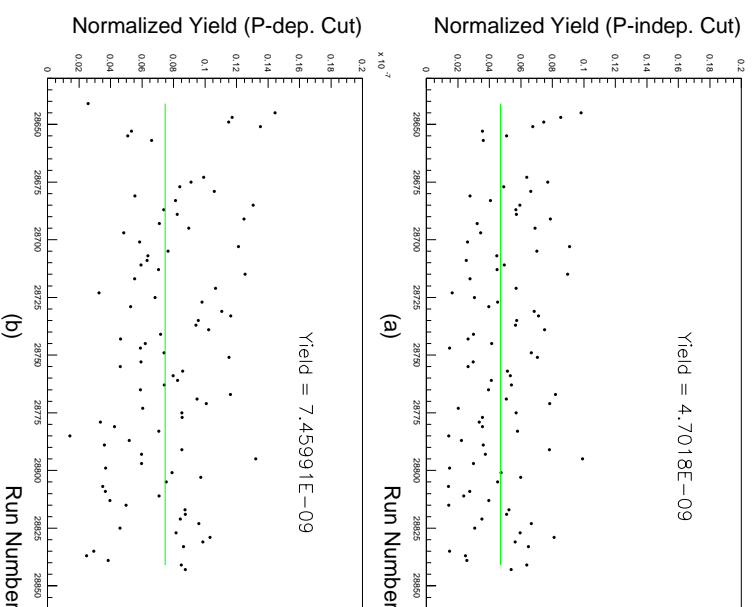


Figure 35: K^- (5σ , Common)

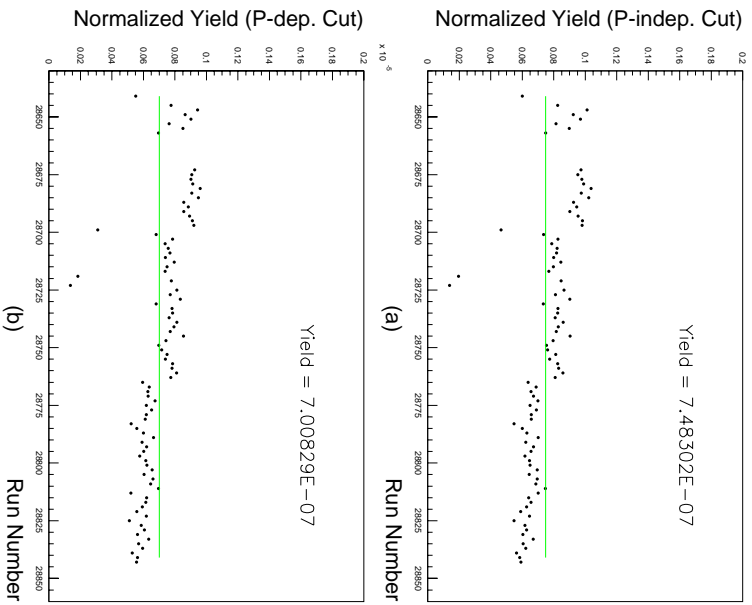


Figure 36: P (2σ , Individual)

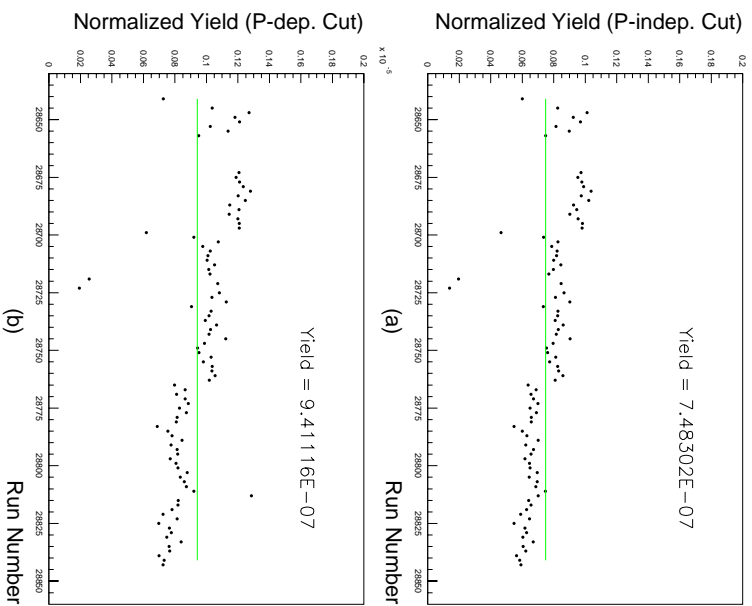


Figure 37: P (5σ , Individual)

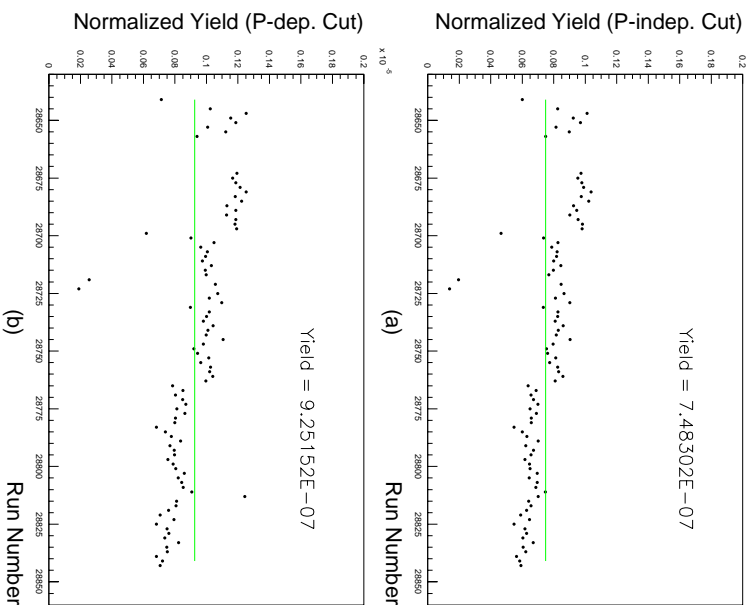


Figure 38: P (5σ , Common)