

# THIRD PRODUCTION

Preliminary Analyses

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# Pico Cut Set 1:

$|\text{Cos}(\theta^*)| < 0.6$

Probability  $> 0.1$

$|\text{RapidityD0}| < 0.5$

Slength  $> 0$

$|\text{ndEdx}|_{\text{K},\pi} < 2$

Plots are at:

[http://www.star.bnl.gov/~jai2006/jjoseph/29thSep2010\\_3rdProduction.htm](http://www.star.bnl.gov/~jai2006/jjoseph/29thSep2010_3rdProduction.htm)

A weak signal appeared when requiring the momentum of tracks to be  $> 0.7\text{GeV}/c$  combined with other cuts

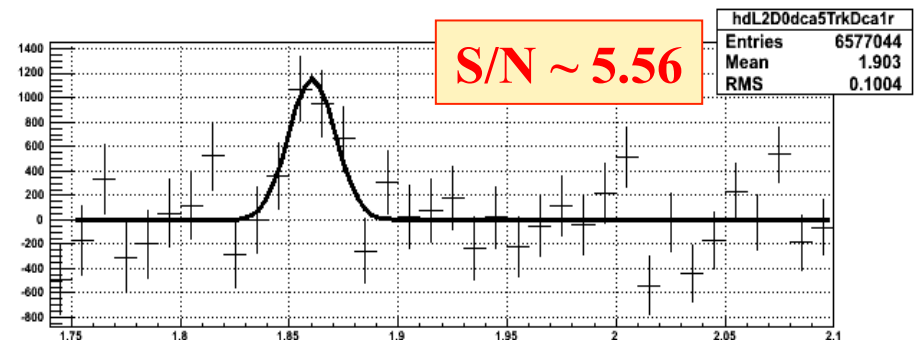
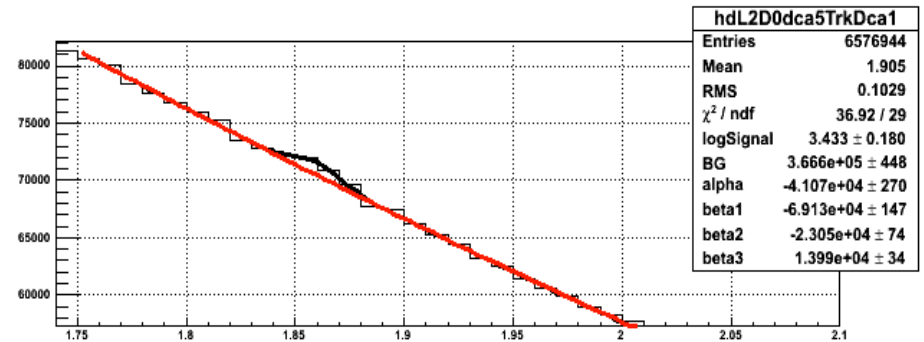
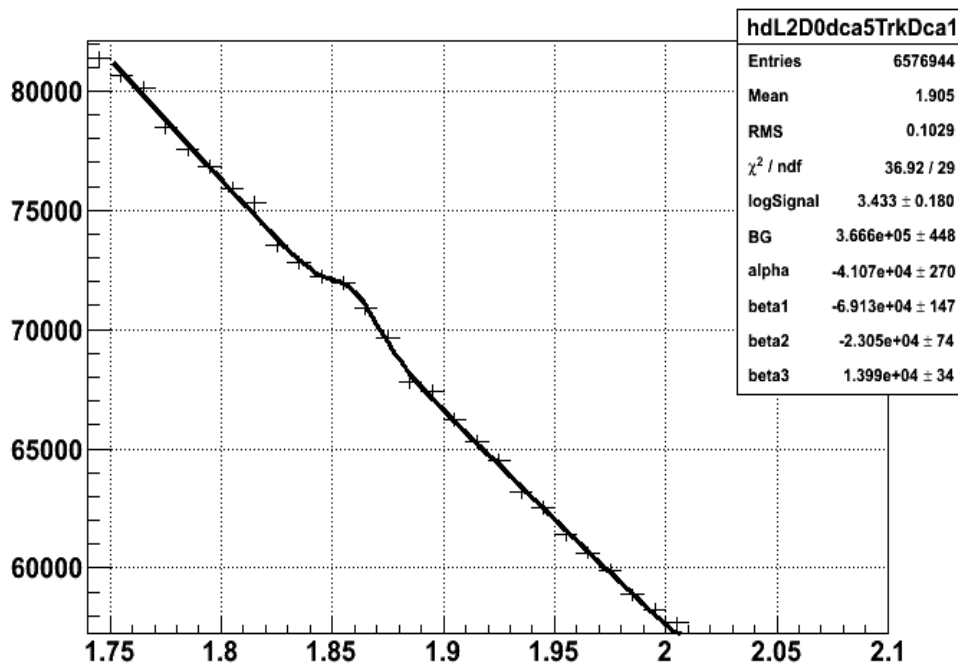
# Pico Cut Set 2 (Number of Evts ~ 6.5M)

## Cuts Used to make pico file:

- $|\text{Cos}(\theta^*)| < 0.6$
- $|\text{RapidityD0}| < 0.5$
- $|\text{ndEdx}|_{\text{K},\pi} < 2$
- SiHits > 2
- dcaXY < 0.1
- Probability > 0.1
- $|\text{EtaD0}| < 1.85$

## Offline Cuts on the plot below:

- $50\mu\text{m} < |\text{decayLength}| < 400\mu\text{m}$
- $|\text{D0dcaPV}| < 200\mu\text{m}$
- Dca betw. Tracks <  $200\mu\text{m}$



More cut sets and plots are at:

[http://www.star.bnl.gov/~jai2006/jjoseph/17thNov2010-SecondLook\\_3rdProd.htm](http://www.star.bnl.gov/~jai2006/jjoseph/17thNov2010-SecondLook_3rdProd.htm)

# Pico Cut Set 2 (Number of Evts ~ 6.5M)

## (D0+D0bar)

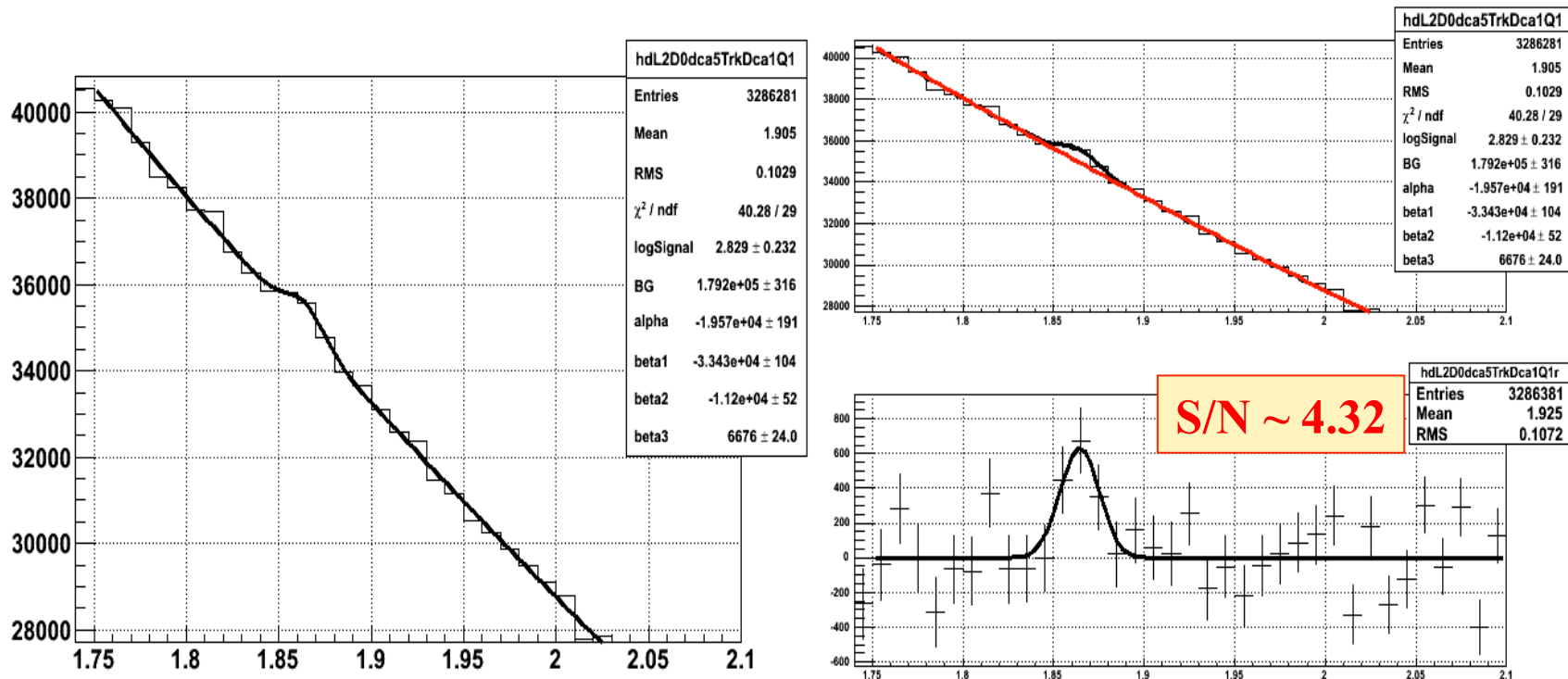
Offline Cuts on the plot below:

$50\mu\text{m} < |\text{decayLength}| < 400\mu\text{m}$

$|\text{D0dcaPV}| < 200\mu\text{m}$

Dca betw. Tracks  $< 200\mu\text{m}$

$\text{chargeK} * \text{ChargePi} < 0$



# Pico Cut Set 2 (Number of Evts ~ 6.5M)

**DO**

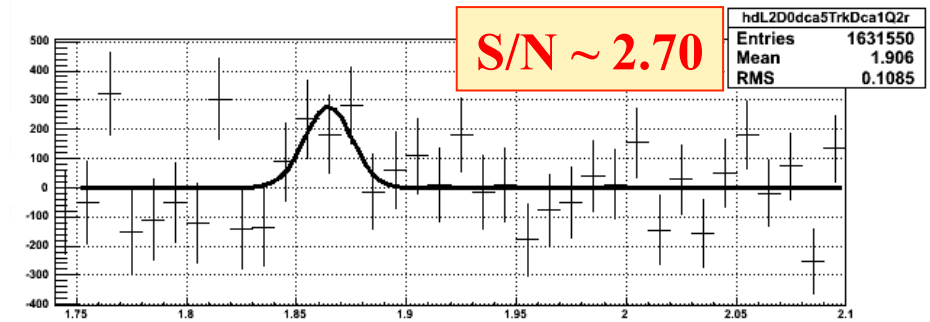
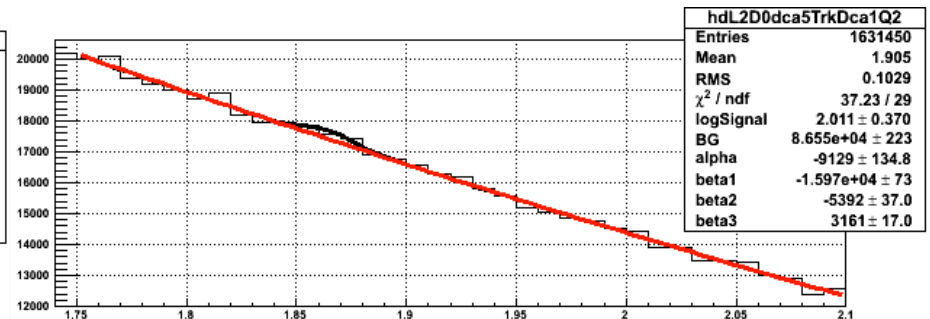
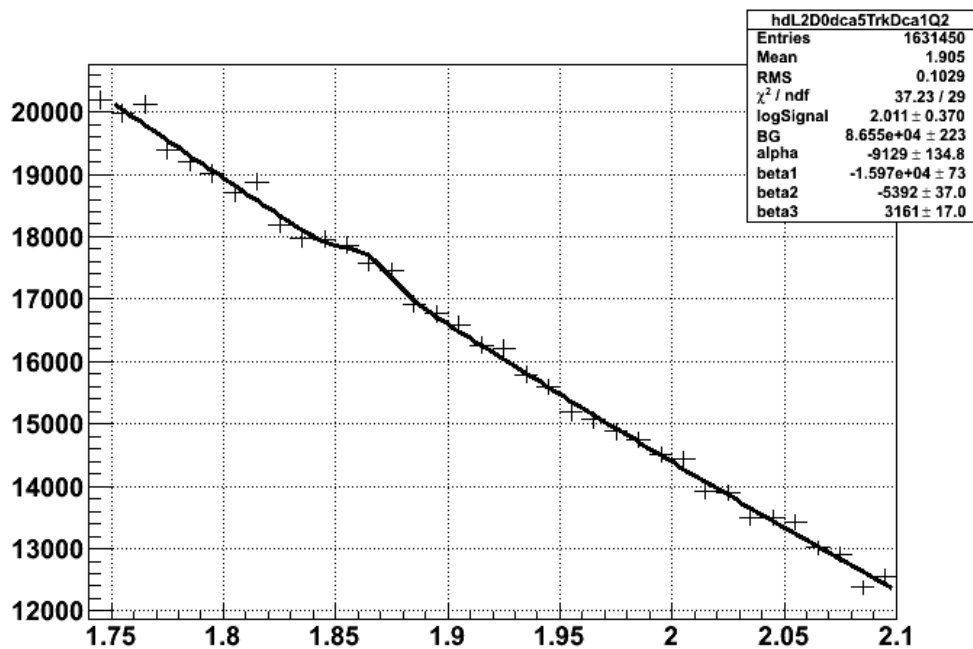
Offline Cuts on the plot below:

$50\mu\text{m} < |\text{decayLength}| < 400\mu\text{m}$

$|\text{D0dcaPV}| < 200\mu\text{m}$

Dca betw. Tracks  $< 200\mu\text{m}$

$\text{chargeK} < 0 \ \&\& \ \text{ChargePi} > 0$



# Pico Cut Set 2 (Number of Evts ~ 6.5M)

## D0bar

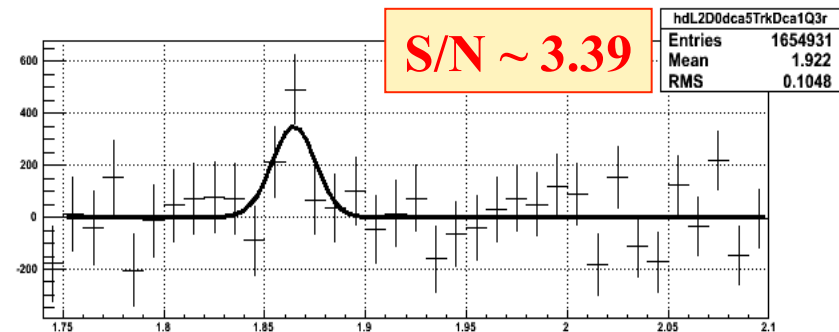
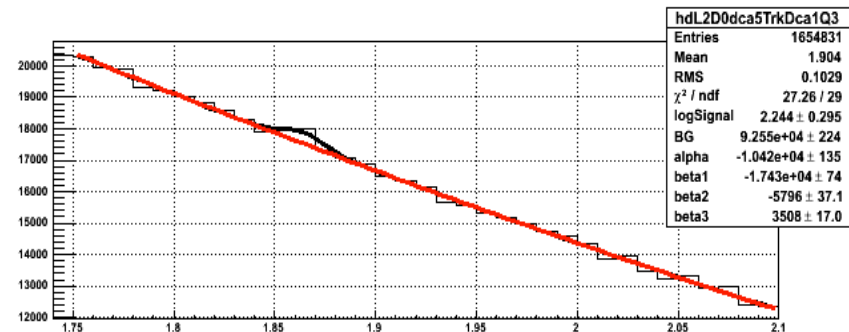
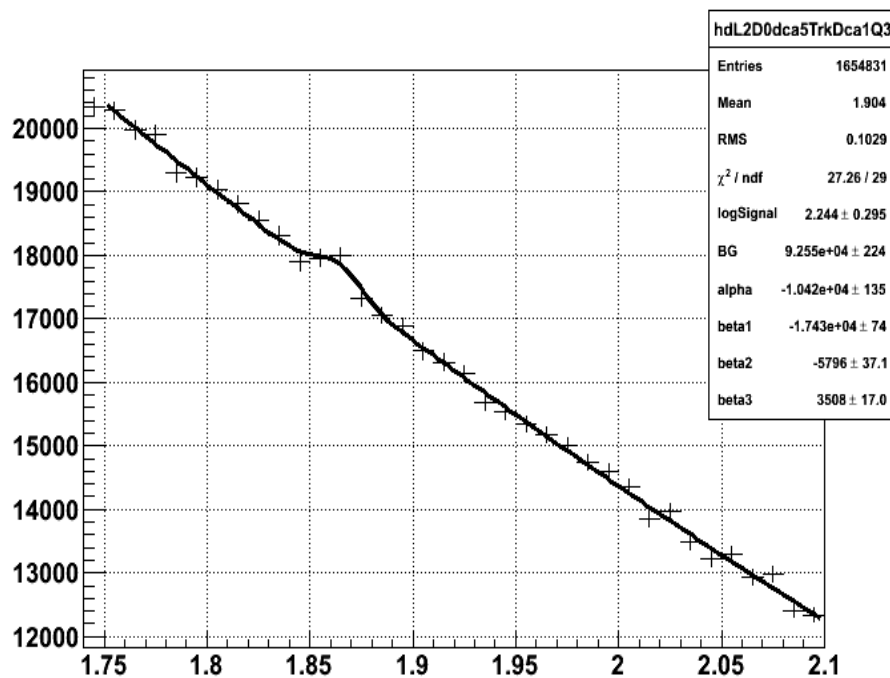
Offline Cuts on the plot below:

$50\mu\text{m} < |\text{decayLength}| < 400\mu\text{m}$

$|\text{D0dcaPV}| < 200\mu\text{m}$

Dca betw. Tracks  $< 200\mu\text{m}$

$\text{chargeK} > 0$  &  $\text{ChargePi} < 0$



# Summary

- ✧ With new dataset a strong signal is observed without adding a cut on the track momenta.
- ✧ Increased the requirement on SiHits  $> 2$  and probability  $> 0.1$
- ✧ In the next step I will try to relax the cut on probability to see the effect
- ✧ To do : Try same sign background subtraction with the available statistics