Pion Asymmetry Analysis

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October 17, 2007

Variable	Cut	Reason
B.ts.ps.e	$100 < x < 400$	Select π^-
B.tr.vz	$-0.18 < x < 0.18$	w/in target cell
Ndata.D.bit2	true	Select T2s
Ndata.D.bit3	true	Select T3s

The cuts were used to select pions with a hit in BigBite, which originated in within the target region
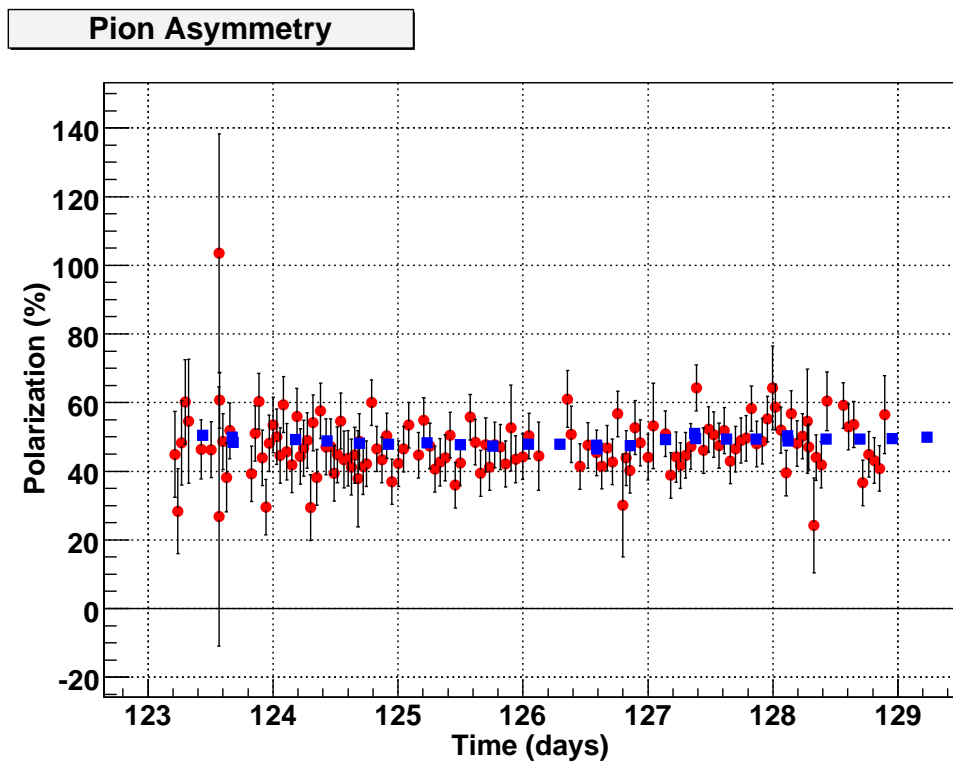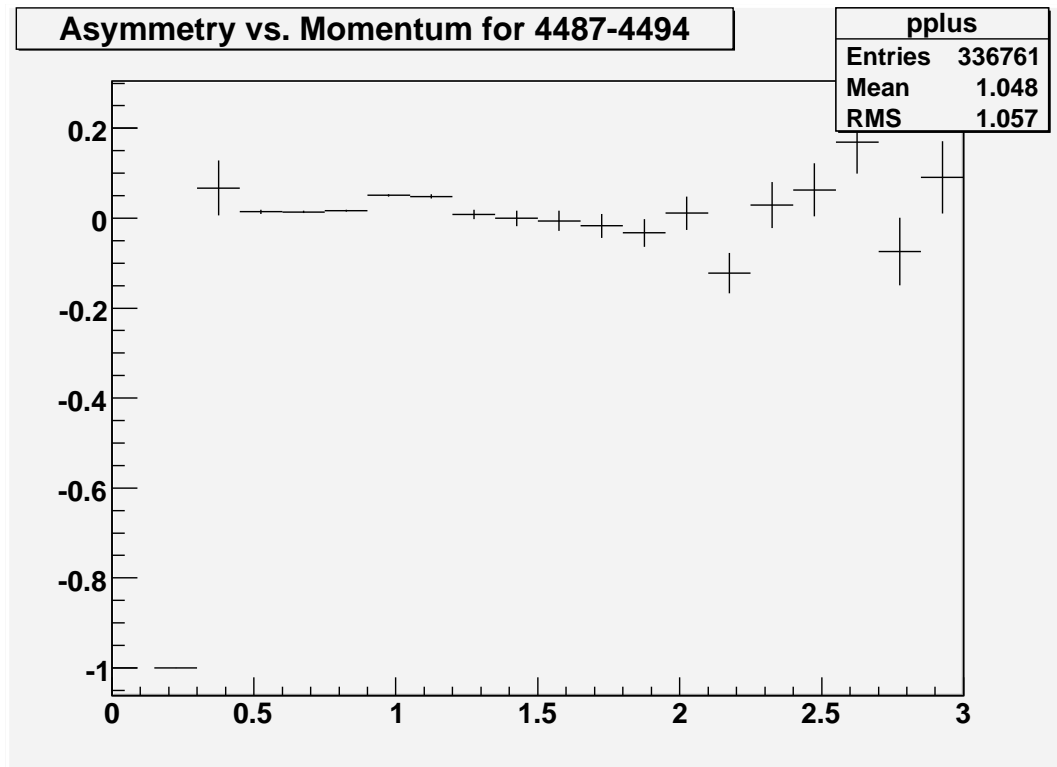
Pion Asymmetry for Kin 4. The pion asymmetry, target polarization measurements (blue squares) have systematic uncertainty included.
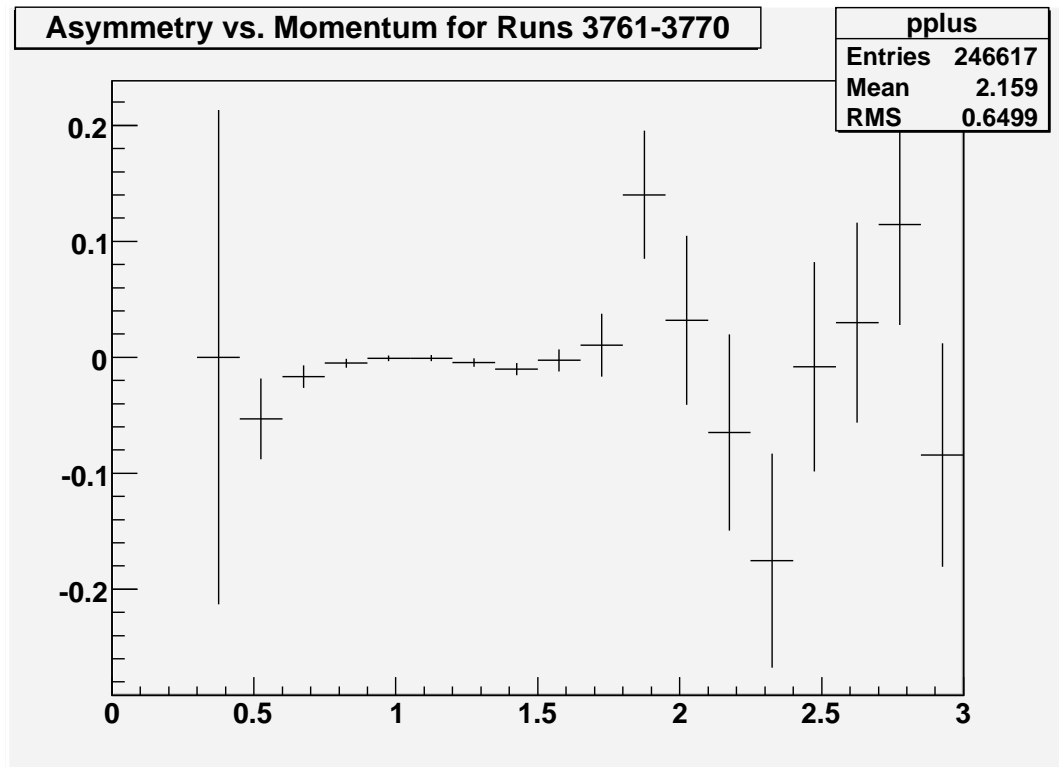
As seen Oct. 4
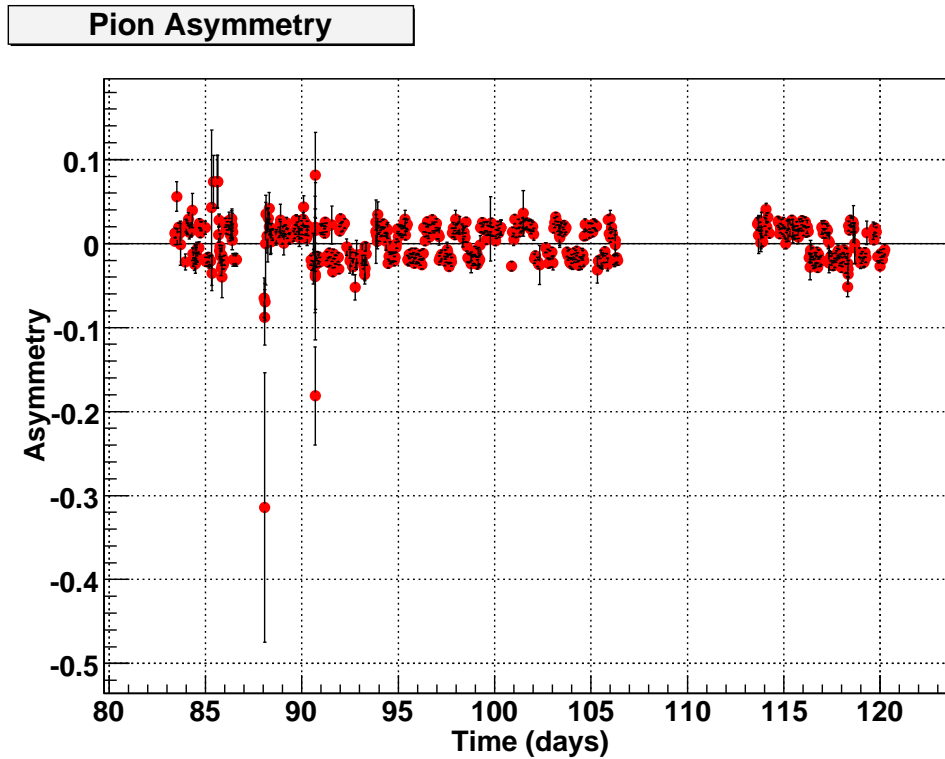
Pion Asymmetry for Kin 3. Same as previous slide, but for Kin 3 − note: the asymmetry is much smaller.

Asymmetry vs. Momentum for 4487-4494

| pplus	
Entries	336761
Mean	1.048
RMS	1.057

Pion Asymmetry vs. Momentum. Pion asymmetry vs. momentum for kin 4. There is clearly a larger asymmetry at about 1 (units?)

**Pion Asymmetry vs. Momentum.** The same for kin 3. The same "bump" can be seen.

Asymmetry vs. Momentum for Runs 3761-3770

| pplus	
Entries	246617
Mean	2.159
RMS	0.6499
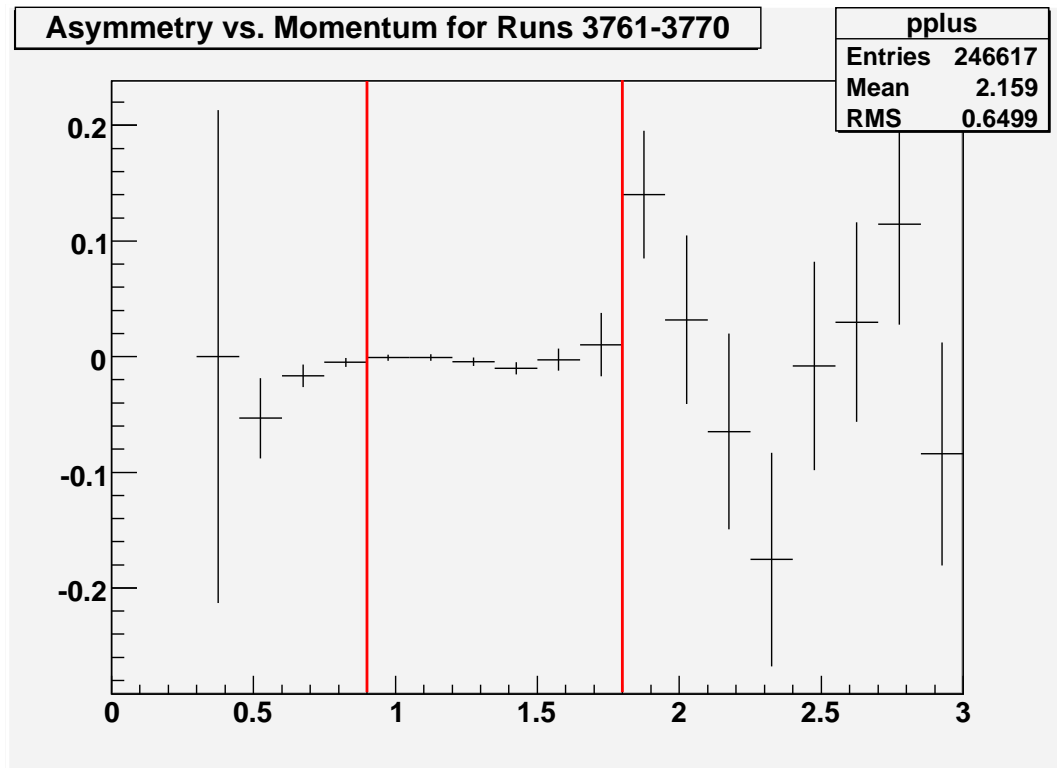
Defining Momentum Cut. Preparing to re-run the kin. 3 asymmetry with a momentum cut. (from one file: we go from 41181 events to 26665 events with this cut)
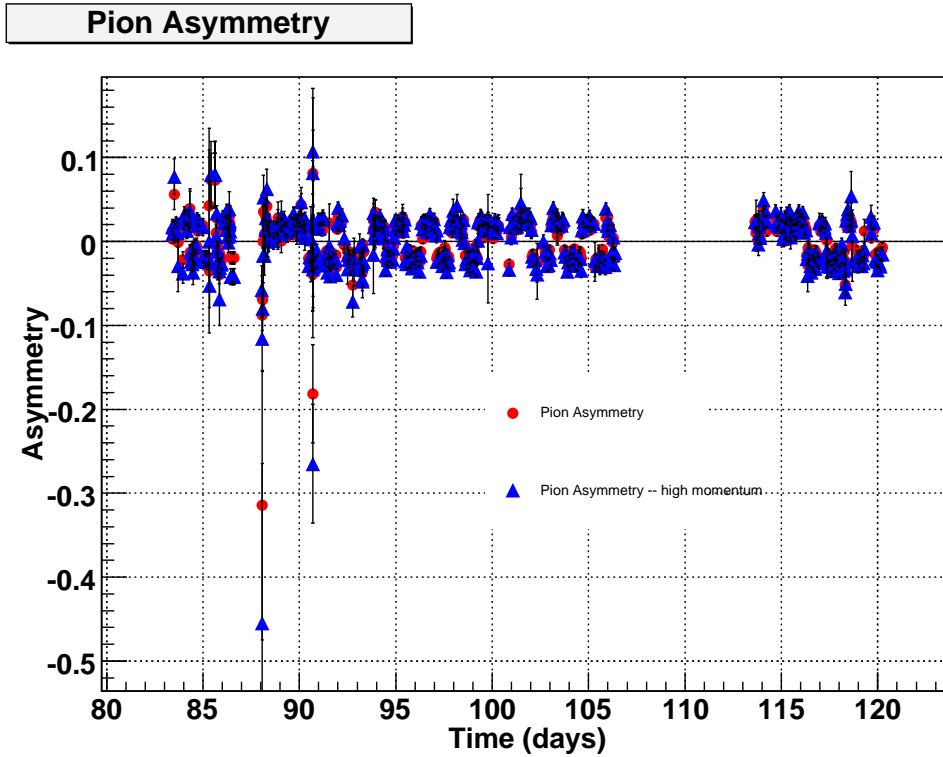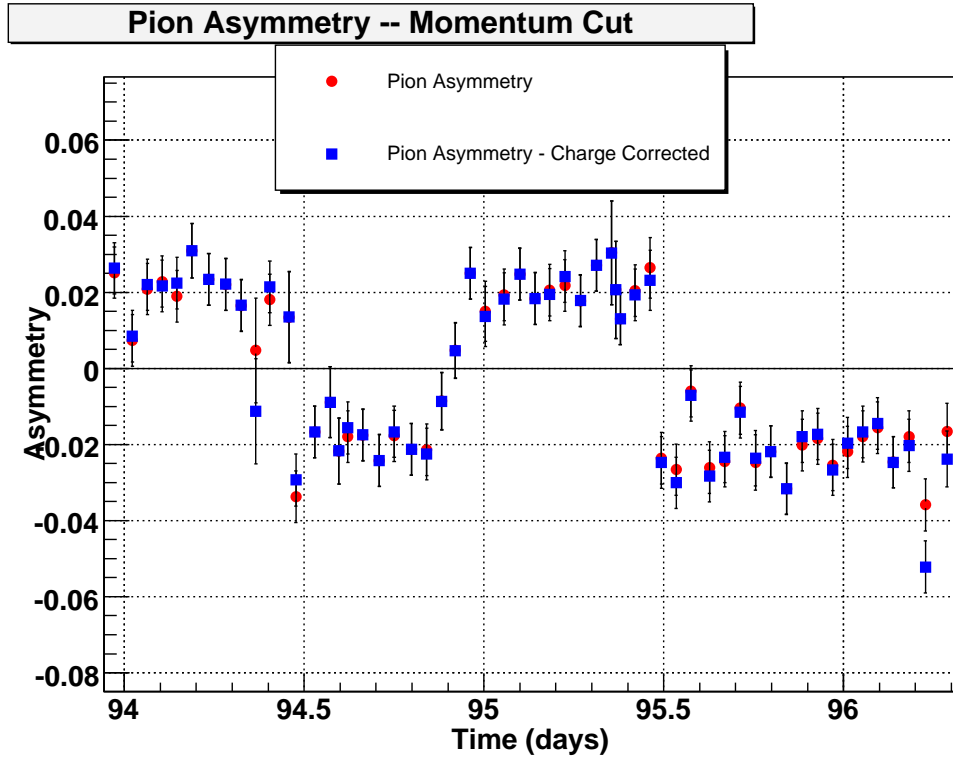
Pion Asymmetry with Momentum Cut. Applying a cut of $0.9 < B.tr.p < 1.8$ (compared to no cut)
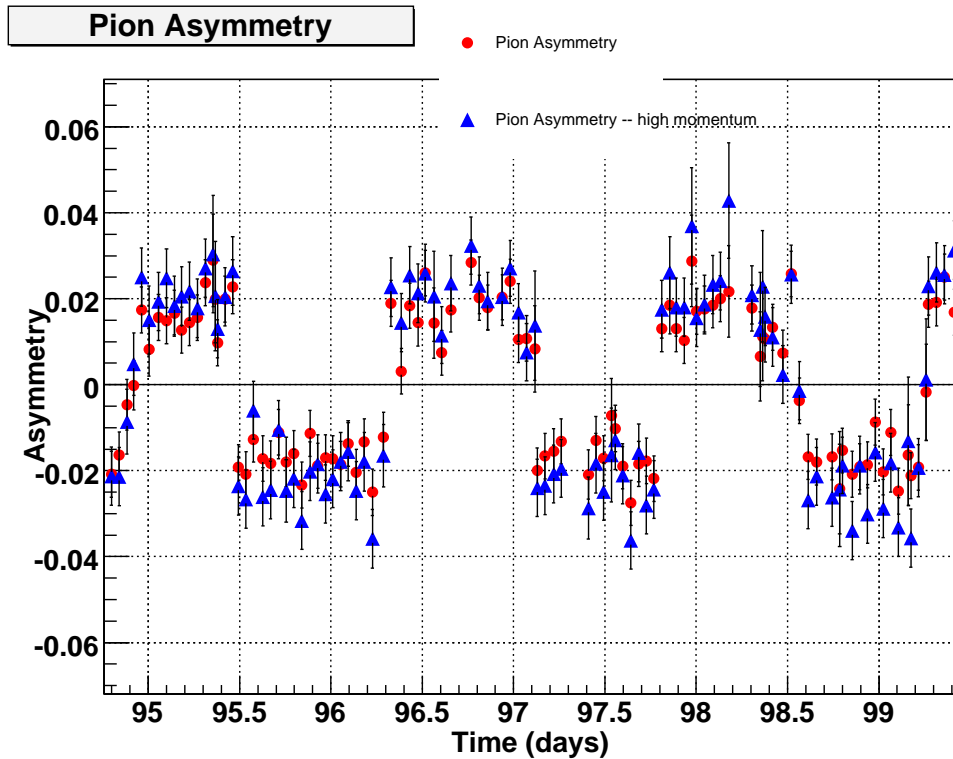
Pion Asymmetry with Momentum Cut – Zoomed In. Applying a cut of $0.9 <$ B.tr.p < 1.8 (compared to no cut), zoomed in to see details.

Pion Asymmetry -- Momentum Cut
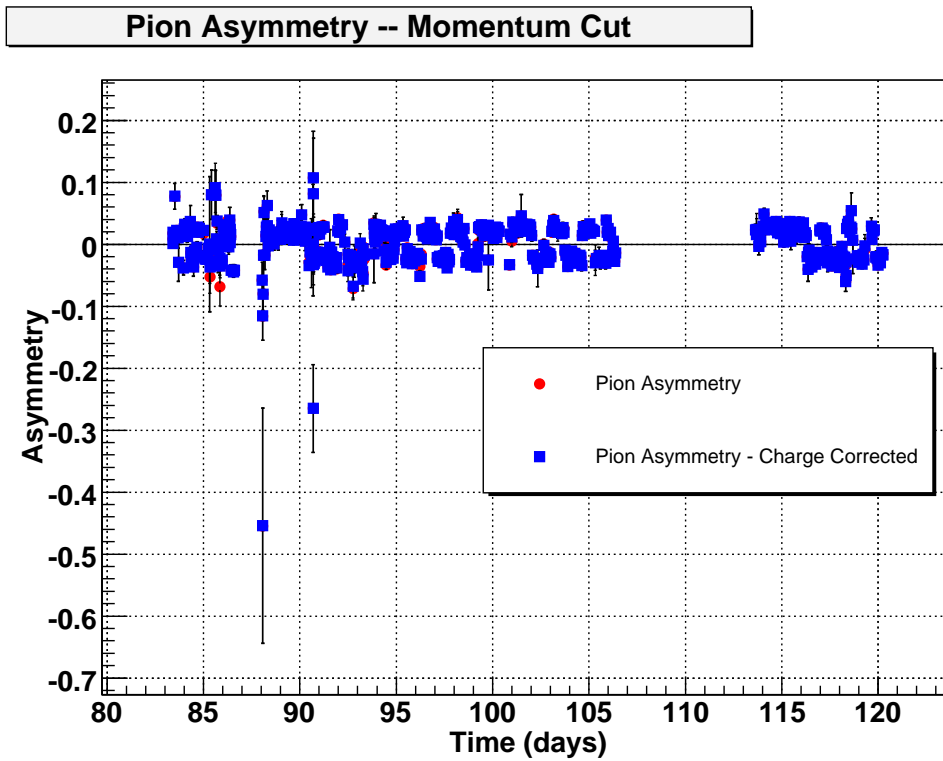
Pion Asymmetry with Charge Correction.

Correcting for charge asymmetry

Pion Asymmetry with Charge Correction.
Pion asymmetry corrected for charge asymmetry – zoomed in to see details.