

Self Introduction

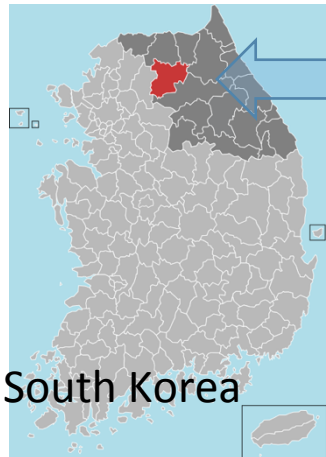
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2015-07-14

Spinfest 2015

1. Personal Information

- Birth



- Education

- B.S., M.S. in SNU
- In Ph.D. course in SNU currently, with IPA program in RIKEN

- Hobby

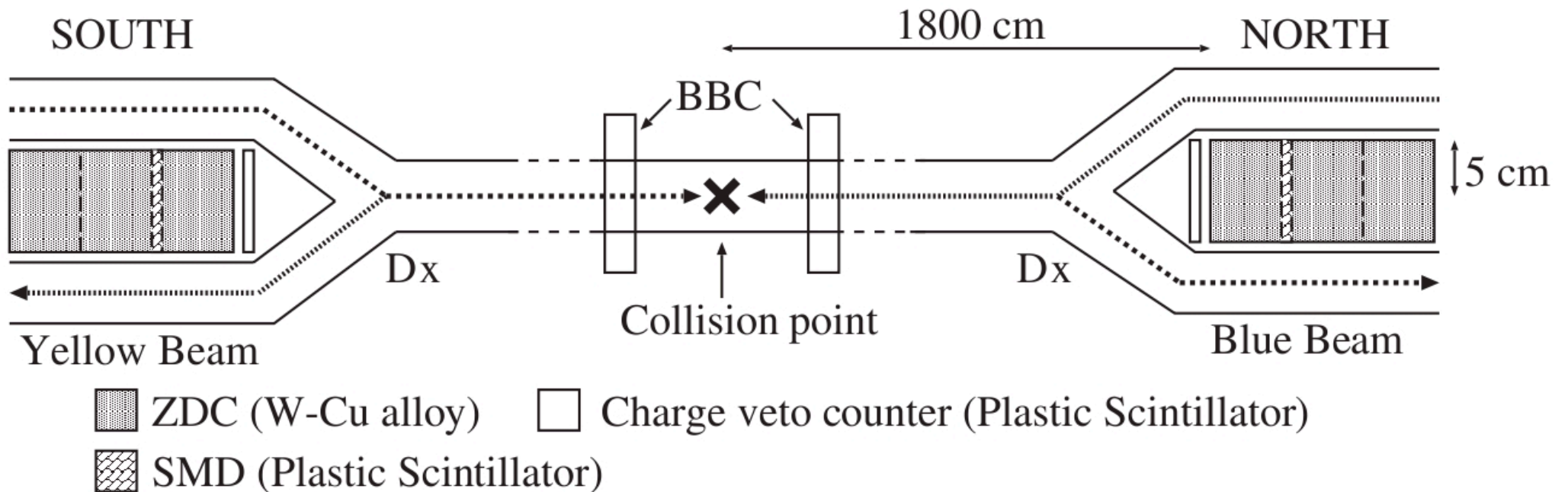


Belly dance

2. My works at PHENIX

- Joined Kiyoshi's lab. from 2012
- Worked at PHENIX from 2013
- What I did
 - Local Polarimetry Analysis for Run13
 - ZDC/LocalPol : Main focus (2013-2015)
 - Mutr/Mutrg : Maintenance (2013), Expert (2013, 2015)
 - ERT : Expert (2015)
- Ph.D. Thesis Topic
 - Measurement of single transverse spin asymmetries for neutron productions at zero degrees in $\sqrt{s} = 200$ GeV pp, pAl, and pAu collisions.

3. Local Pol Basics



- **Zero Degree Calorimeter** : Neutron energy measurement
- **Shower Max Detector** : Reconstruct a neutron X-Y position using shower profile
- **Charge Veto Counters** : Plastic scintillator for charge veto

4. ZDC/Local Pol task (1)

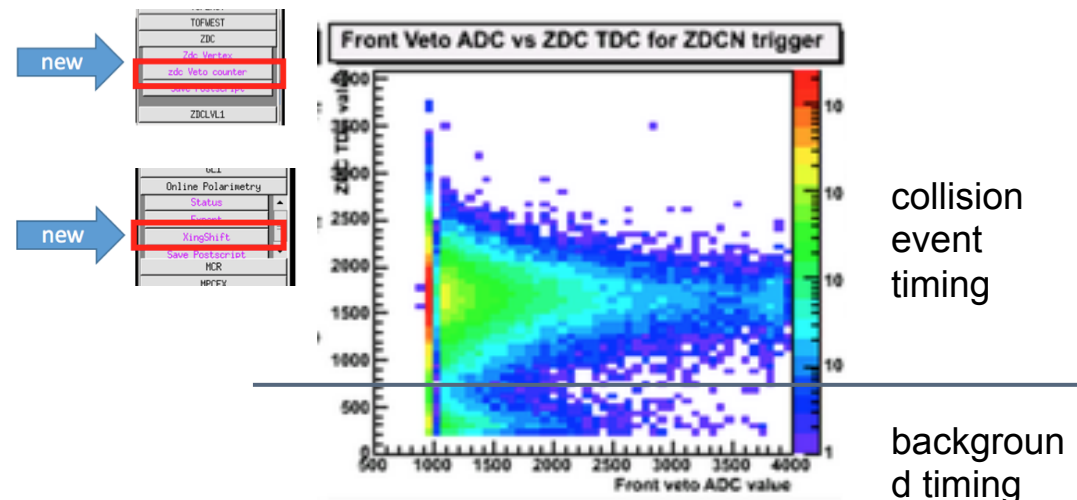
- Taking care of software
 - Made production codes for charge veto counters
 - Charge veto counter: Reinstalled before Run15pAu
 - Source codes:
<https://www.phenix.bnl.gov/viewvc/viewvc.cgi/phenix/offline/packages/lpol/>
 - Will be added from Run15 pAu DST_EVE production
- Update/maintain online monitor
 - ZDC
 - Channel by channel FEM healthiness
 - Trigger Timing distribution
 - Integrated Charge veto counters
 - Background monitor
 - Local Pol
 - Crossing shift calibration

/ [phenix] / offline / packages / lpol

Index of /offline/packages/lpol

Files shown: 21
Sticky Tag:
Query:

File	Rev.	Age	Author	Last log entry
Parent Directory				
lPol.h	1.1	5 weeks	phnxzdc	forward charge veto counter for run15pA200
lPolConst.h	1.1	5 weeks	phnxzdc	forward charge veto counter for run15pA200
lPolEvent.cc	1.1	5 weeks	phnxzdc	forward charge veto counter for run15pA200
lPolEvent.hh	1.1	5 weeks	phnxzdc	forward charge veto counter for run15pA200
lPolLinkDef.h	1.1	5 weeks	phnxzdc	forward charge veto counter for run15pA200
lPolMap.C	1.1	5 weeks	phnxzdc	forward charge veto counter for run15pA200
lPolMap.h	1.1	5 weeks	phnxzdc	forward charge veto counter for run15pA200
lPolRaw.C	1.1	5 weeks	phnxzdc	forward charge veto counter for run15pA200
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lPolReco.C	1.1	5 weeks	phnxzdc	forward charge veto counter for run15pA200
lPolReco.h	1.1	5 weeks	phnxzdc	forward charge veto counter for run15pA200
Makefile.am	1.1	5 weeks	phnxzdc	Makefile.am
autogen.sh	1.1	5 weeks	phnxzdc	Makefile.am
configure.in	1.1	5 weeks	phnxzdc	Makefile.am



Example: veto charge vs. zdc timing

4. ZDC/Local Pol task (2)

- Preparation
 - T,Q-scan : check linearity, tdc to ns conversion constant of each ZDC channel
 - LED run : pedestal, gain adjustment (HV)
- Calibration for Run15 pp
 - ZDC/SMD pedestal
 - ZDC timing for zvertex – tdc to ns conversion, slewing & offset correction (w/ bbc timing)
- Timing adjustment
 - Purpose : make zvertex distribution symmetric in trigger level

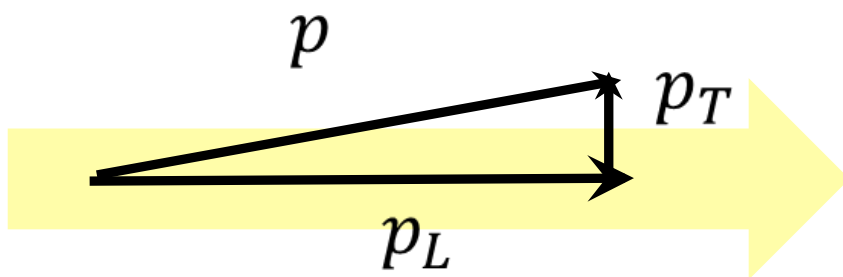


- Took dedicated local pol run for Run15 pp, pAu, pAl
 - W/ special store setup for pAu, pAl

5. Local Pol Analysis (Run13)

- For spin asymmetry measurement, measured asymmetries are smeared by polarization
- Polarization component: measured by PHENIX local polarimeter
 - Transverse runs : polarization angle
 - Longitudinal runs (Run13) : separate longitudinal & transverse component

Result



Yellow beam:

$$\frac{p_T}{p} = 0.007327^{+0.004423}_{-0.007327}(\text{stat.})^{+0.005279}_{-0.000000}(\text{syst. bc}) + 0.001158(\text{syst. e})$$

$$\frac{p_L}{p} = 0.999973^{+0.000027}_{-0.000038}(\text{stat.})^{+0.000000}_{-0.000043}(\text{syst. bc}) - 0.000008(\text{syst. e})$$

Blue beam:

$$\frac{p_T}{p} = 0.048686^{+0.008164}_{-0.008736}(\text{stat.})^{+0.000000}_{-0.006180}(\text{syst. bc}) \pm 0.003292(\text{syst. e})$$

$$\frac{p_L}{p} = 0.998814^{+0.000386}_{-0.000436}(\text{stat.})^{+0.000334}_{-0.000000}(\text{syst. bc}) \pm 0.000155(\text{syst. e})$$

A_{LL}^{measured}

$$\cong \frac{1}{p^Y} \frac{1}{p^B} (p_L^Y p_L^B A_{LL} + p_T^Y p_T^B A_{TT})$$

$$\cong 0.999 A_{LL} + O(10^{-3}) A_{TT}$$

Thank you