

Hall C Compton Polarimeter Working Group Meeting

TRIUMF
July 28, 2008

1. Meeting agenda
2. Installation schedule
3. Milestones
4. Optics update
5. Chicane update

Meeting Agenda

Hall C Compton Working Group Meeting
July 28, 2008

Intro and Overview (Gaskell)

Diamond detector overview + infrastructure needs (Dutta)

Diamond detector progress in Canada and electronics (Wang)

Diamond detector progress in US and prototyping (Narayan)

Break

Photon Detector (Deconinck)

DAQ (King)

Laser (Gaskell)

Simulation? (all?)

COMPTON MEETING WITH LEONID KURCHANINOV - 4:00
pm - location TBD.

Installation Schedule

Unofficial installation plans:

Oct. 20, 2009: Open Hall after HKS

Oct. 20, 2009→Jan. 30 2010: HKS removal (Hall C)

Dec. 1, 2009: Beamline work begins (ACC)

→ Install new platform

→ Clear out beamline (complete early Jan.)

→ Install new beamline components (Complete April, 2010)

May 20, 2010: Qweak begins

Update: HKS removal may be accelerated by bringing in Lockwood
– details are not clear to me

Compton Milestones

Task	Responsible Institutions	Planned Completion Date
Dipole magnet design	MIT-Bates	Summer 2008
Finalize whole chicane	MIT-Bates	Fall 2008
Photon detector tests	Yerevan/HU	September 2008
Photon detector final construction	Yerevan/HU	Spring 2009?
Fiber laser low/high power prototypes	JLab	Spring-Summer 2008
Final laser choice	JLab	Fall 2008
Laser transport setup	JLab/Uva	Summer-Fall 2008
Electron detector fabrication	Winn./Man./TRIUMF/ Miss.St.	October 2008
Compton Installation	JLab	Fall 2009-Spring 2010

To-do List (major)

1. Electron detector motion and vacuum can
2. Laser tests with cavity (*partially complete!*)
3. Interaction region design
4. DAQ design and tests
5. Photon detector

→ Since June meeting, progress on all these fronts

Manpower

1. Beamline (JLab): Competing with 12 GeV, FEL, but globally in good shape → we get designer back in August
2. Chicane (MIT-Bates): dipoles mostly done, vacuum remains
3. Laser system (JLab/UVa):
 - “JLab” (Matt, John, Shukui, Chuyu) = laser
 - “JLab”/UVa (Dave, Kent, or designated alternates) = transport, diagnostics
4. Electron Detector (Winn./Miss. State): cruising
5. Photon detector (Yerevan/HU/MIT): prototype in hand – alternate detector?
 - DG contacted Karen Dow about CsI
6. DAQ/software (P. King advises, T. Horn part time, no “owner”)
7. Slow controls → subsystems develop their own

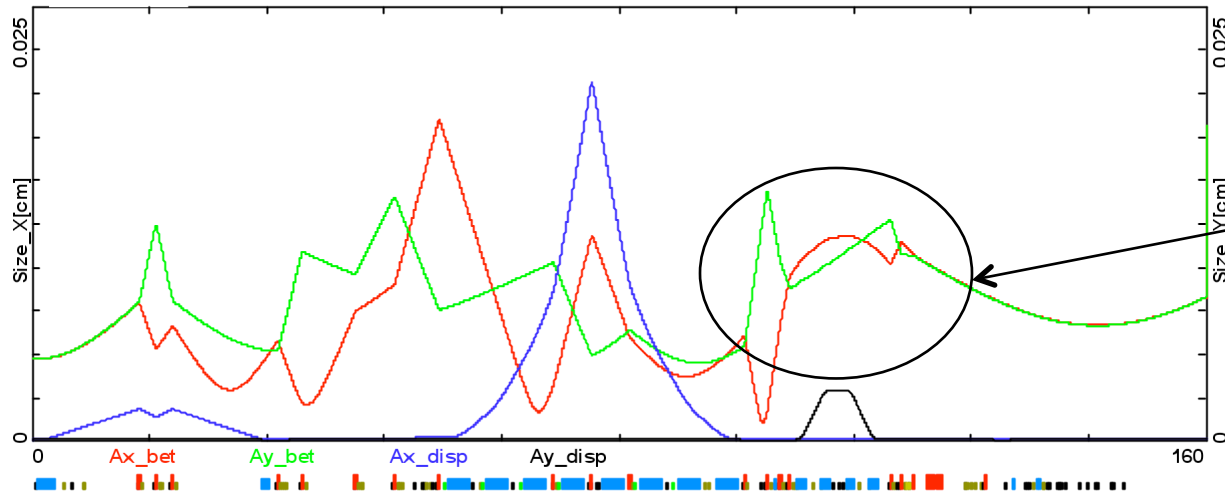
Optics Update

- Original specs for beam size at Compton IP were rather loose ($\sigma=100\ \mu\text{m}$) since we were planning on using DPSS laser with lousy M^2
- Subsequent discussion at working group meeting in July (Jay Benesch and Kent Paschke) revealed that I had failed to update these specs when we switched to fiber laser
- Jay has updated his optics \rightarrow impacts “dithering” etc.
 - Beam size at Compton IP $50\ \mu\text{m}$

Optics Update

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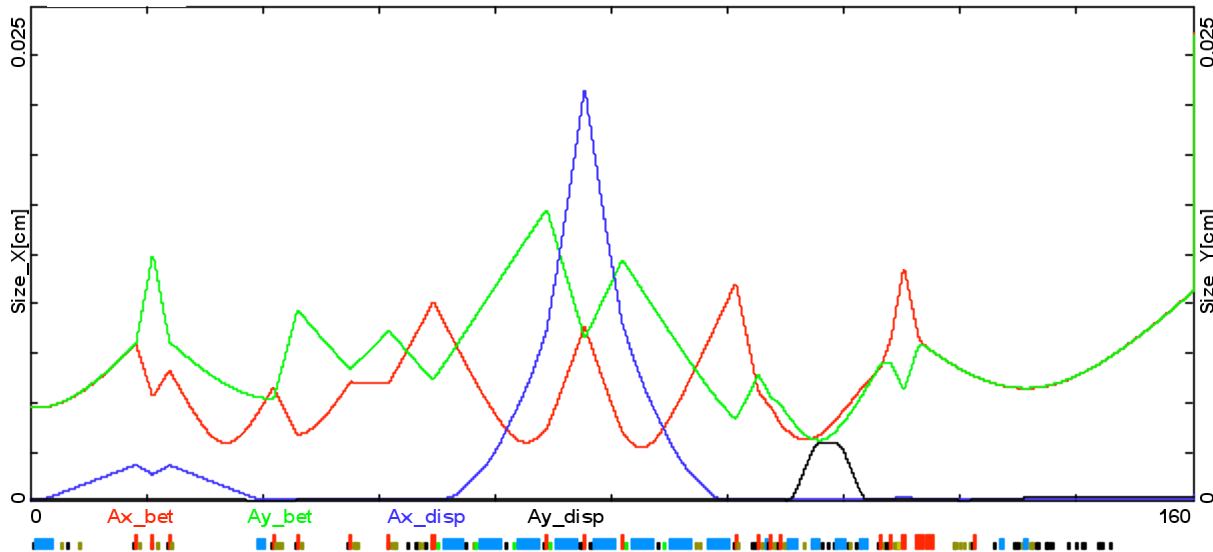
Old optics



Compton IP

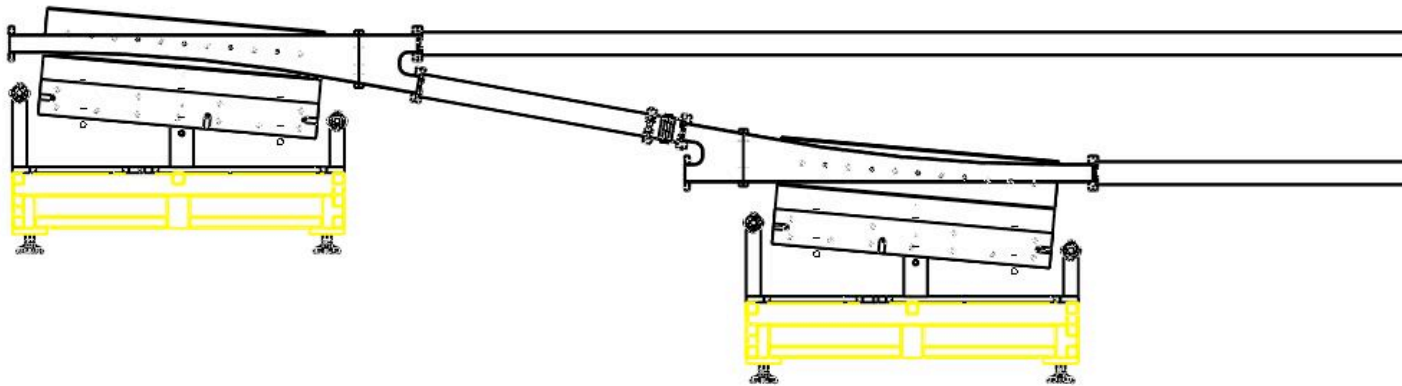
Fri Jun 27 20:23:19 2008 OptiM - MAIN: - O:\opti m\jfbwork\myopt\Current Opt\Hall C2006\hallc_1165_125cm_R17_small

New optics



Chicane Update

Updated layout from Chris Vidal → tilted dipoles with equal entrance and exit angles



Magnets not yet out for bid