



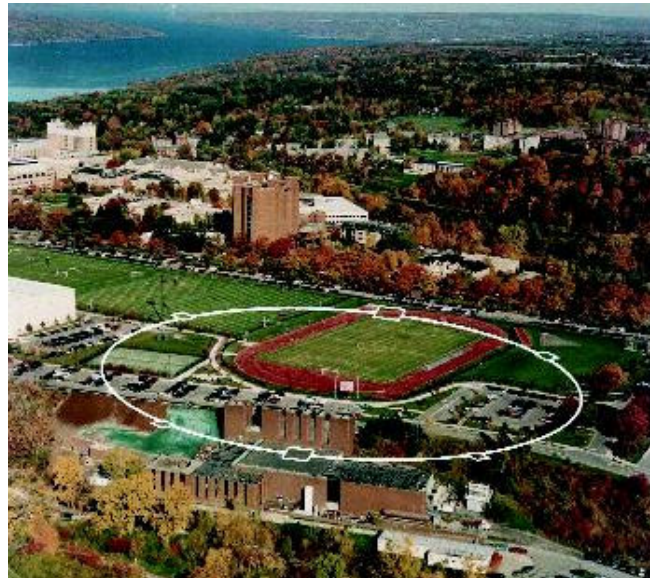
Cornell University
Laboratory for Elementary-Particle Physics

CesrTA Status Report

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September 2, 2009





• Recent News

- CestrTA Run #4 is in progress
 - August 31 – September 8
 - 14 collaborators visiting for this round of experiments
- Next CestrTA Collaboration Meeting – Tuesday, September 8, 5pm US Eastern
- The US NSF has invited us to submit a proposal for a continued accelerator R&D program with CESR continuing into FY13
- Next experimental run to take place from mid-November up to Christmas (Nov 17-Dec 23)
 - Followed by Run #6 in early spring 2010 (exact dates to be finalized before LCWA09)



- Major Experimental Activities
 - Electron Cloud Build-up & Mitigation
 - Tests of new EC-mitigating vacuum chambers
 - Wiggler chamber with grooves (CU-KEK-LBNL-SLAC)
 - Amorphous carbon coated chamber (CERN)
 - Grooved dipole chamber (SLAC)
 - Diagnostic quadrupole chamber
 - Upgraded RFA detectors installed and tested
 - Chicane Studies
 - Beam Size Monitors
 - High energy x-ray coded aperture optics (4-5 GeV) tested for x-ray beam size monitor
 - Commissioning of electron beam x-ray line underway
 - Upgraded vertical polarizer and interferometer setups for visible light beam size monitors
 - Bunch-by-bunch single-pass beam size measurements for EC instability studies
 - Ring Optics Commissioning (see summary following page)
 - Provide a range of conditions for EC studies (radiation distribution and stability criteria)
 - Characterization of IBS effects
 - Range of emittances for hardware characterization
 - Low Emittance Tuning
 - Digital BPM System commissioning (4ns bunch spacing)
 - Integration of data from new instrumentation
- Machine and Power Issues (eg, 3 power failures)

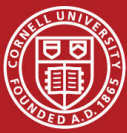


All at $Q_h = 14.57$, $Q_v = 9.62$

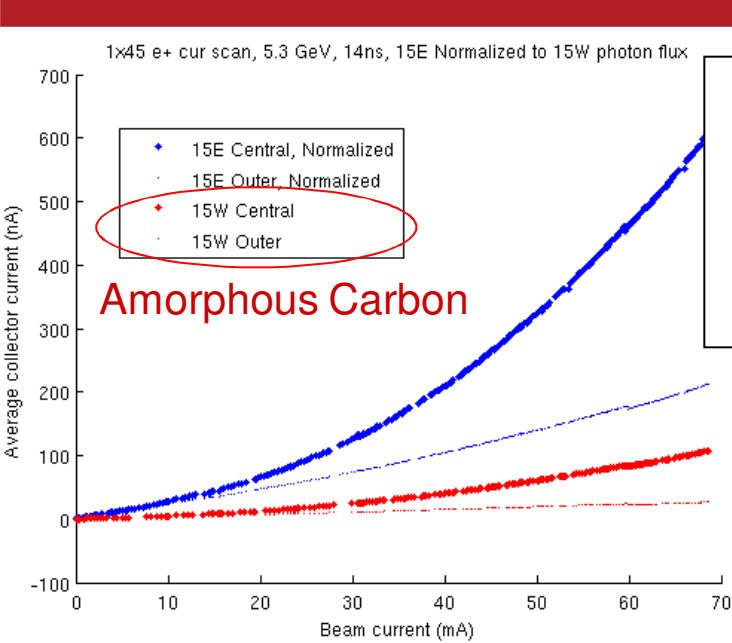
Lattice [cta_]	E[GeV]	Wigglers (1.9T/pm)	ϵ_x [nm]	Polarity of Q0	Status
2085mev_20090516	2.085	12 /0	2.5	HF	e+/e- inj & e+/e- xBSM bumps
4000mev_20090814	4.0	0 /0	42	VF	e+ xBSM bump /no e-
4000mev_23nm_20090816	4.0	6 /0	23	VF	e+ xBSM bump/ e- inj
2300mev_20090608	2.3	12/0	3.3	HF	e+ inj/ no xBSM bump
1800mev_20090607*	1.8	12/0	2.3	HF	e+ inj/ no ramp
3000mev_q0h_20090822	3.0	6/0	10	HF	e+ inj & xBSM bump
3000mev_q0v_20090821	3.0	6/0	9.8	VF	e+ inj & xBSM bump
5000mev_pmwig_20090314	5.0	0/2	90	VF	e+/e- inj, e+ xBSM
5000mev_40nm_20090513	5.0	6/0	40	VF	e+/e- inj, e+ xBSM

•Orbit/phase/coupling correction and injection but no ramp and recovery

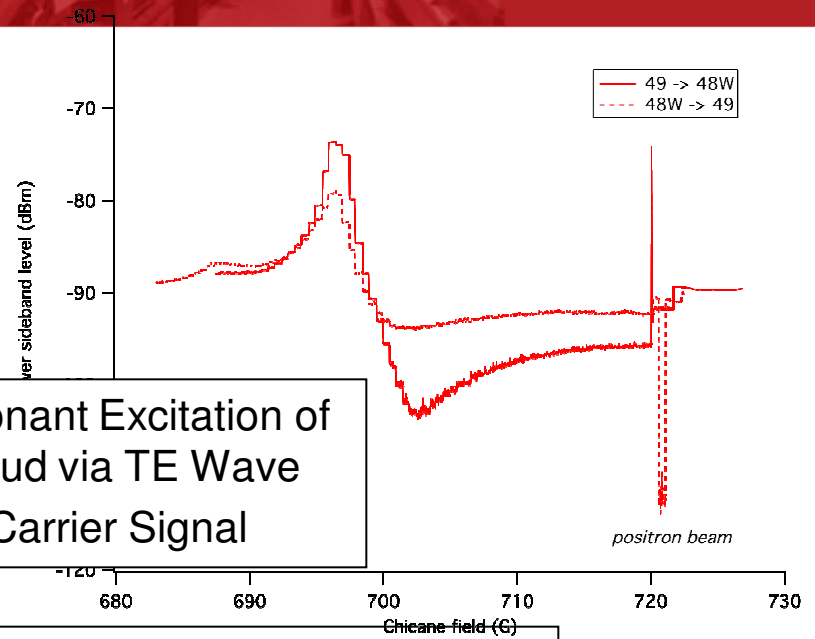
In all other optics there has been at least one ramp and iteration on injection tuning and phase/coupling correction



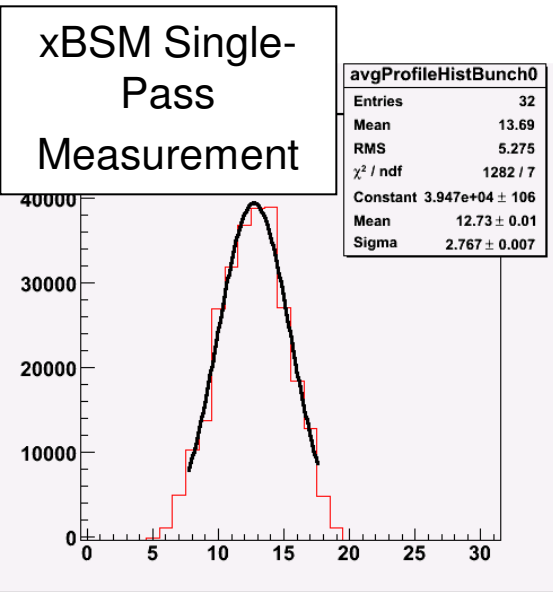
A Few "Log Book" Snapshots



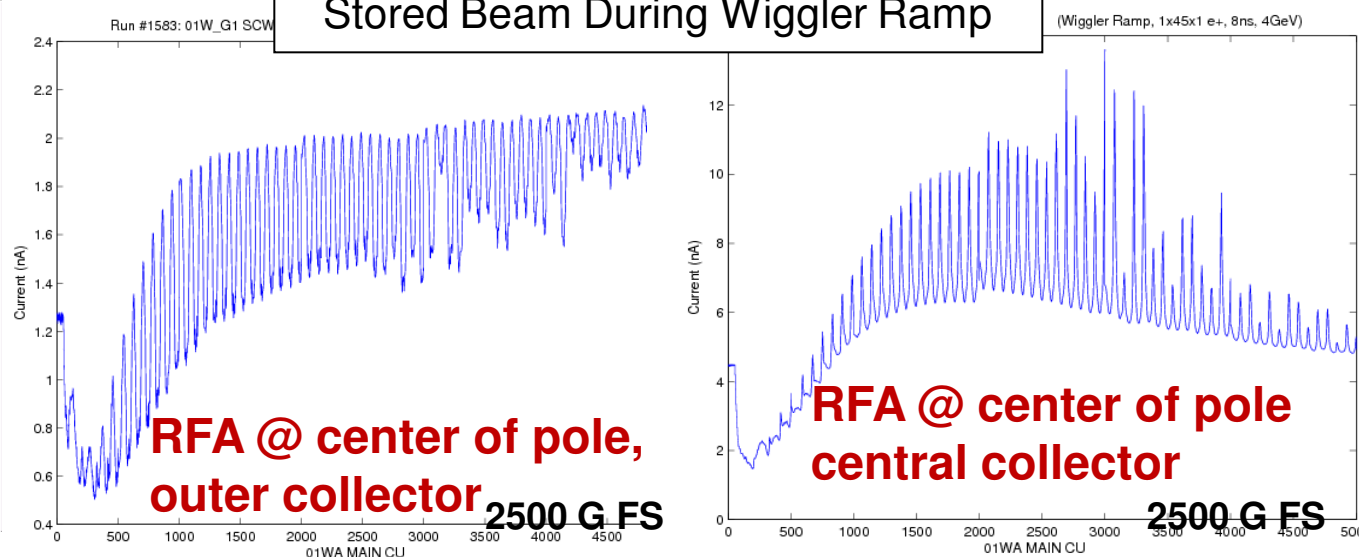
Amorphous
C-Coated VC
(CERN)
VS
Al VC



Resonant Excitation of
Cloud via TE Wave
Carrier Signal



Cyclotron Resonances
Stored Beam During Wiggler Ramp





- More details will be presented at:
 - CestrTA Collaboration WebEx Next Week

Topic: CestrTA Collaboration

Date: Tuesday, September 8, 2009

Time: 5:00 pm, Eastern Daylight Time (GMT -04:00, New York)

Meeting Number: 753 665 692

Meeting Password: cesrta

- Damping Ring Sessions at LCWA09