



Magnetic Measurements At SLAC

Zack Wolf, Yurii Levashov,
Achim Weidemann, Seva Kaplounenko,
Scott Jansson, Ralph Colon, Dave Jensen,
Scott Anderson, Andrew Fisher,
Luis Juarez, Andrew Hau,
Brendan Dix



IMMW 15 August 21-24, 2007 Fermilab

LCLS, The Current Large Magnetic Measurement Project

Linac Coherent Light Source
1.5 Å Free Electron Laser



August 21-24, 2007
Magnetic Measurements At SLAC

Zachary Wolf
wolf@slac.stanford.edu

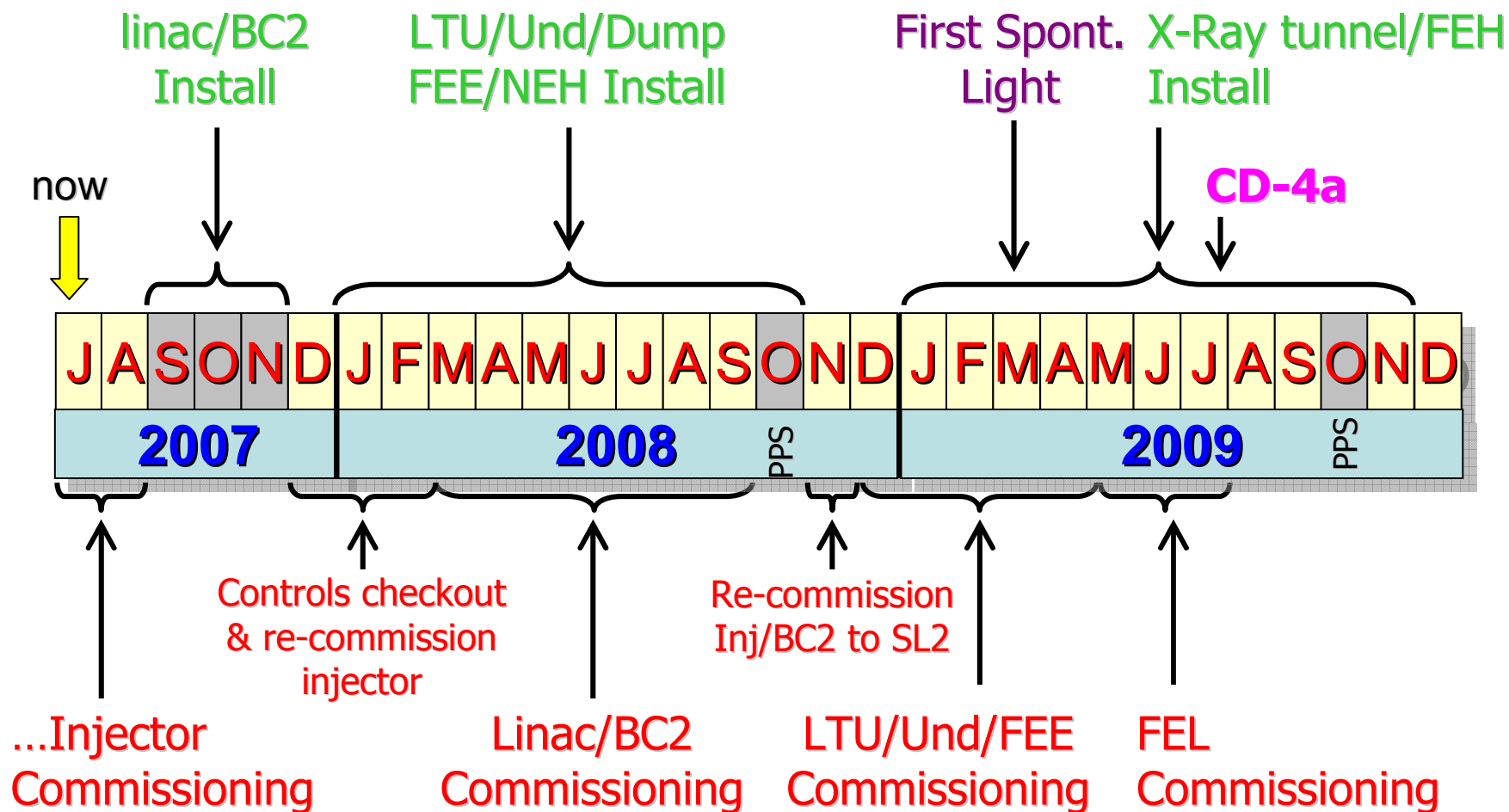




LCLS Installation and Commissioning Time-Line

June 29, 2007

Paul Emma



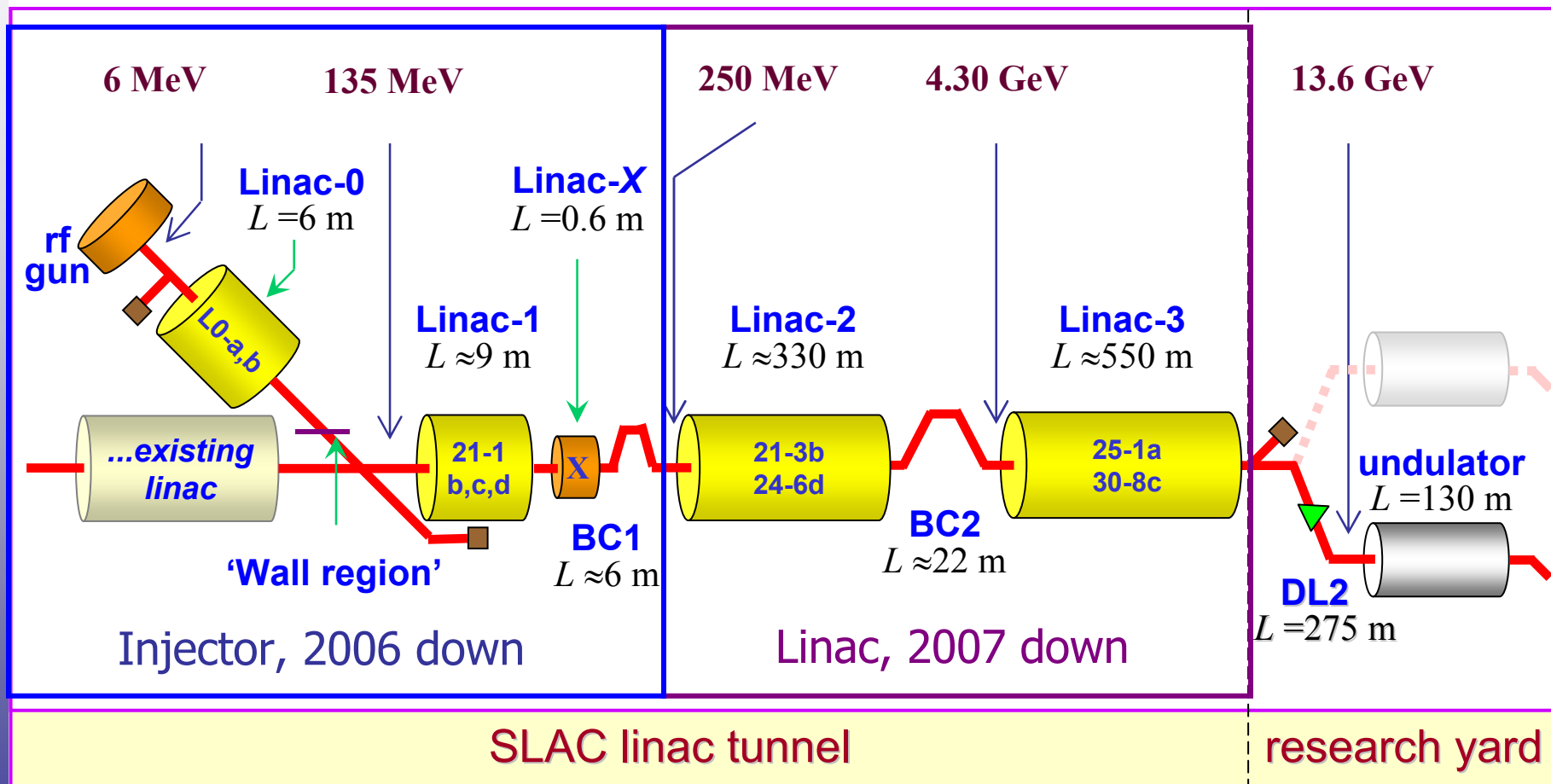
August 21-24, 2007

Magnetic Measurements At SLAC



Installation Schedule

Dave Schultz

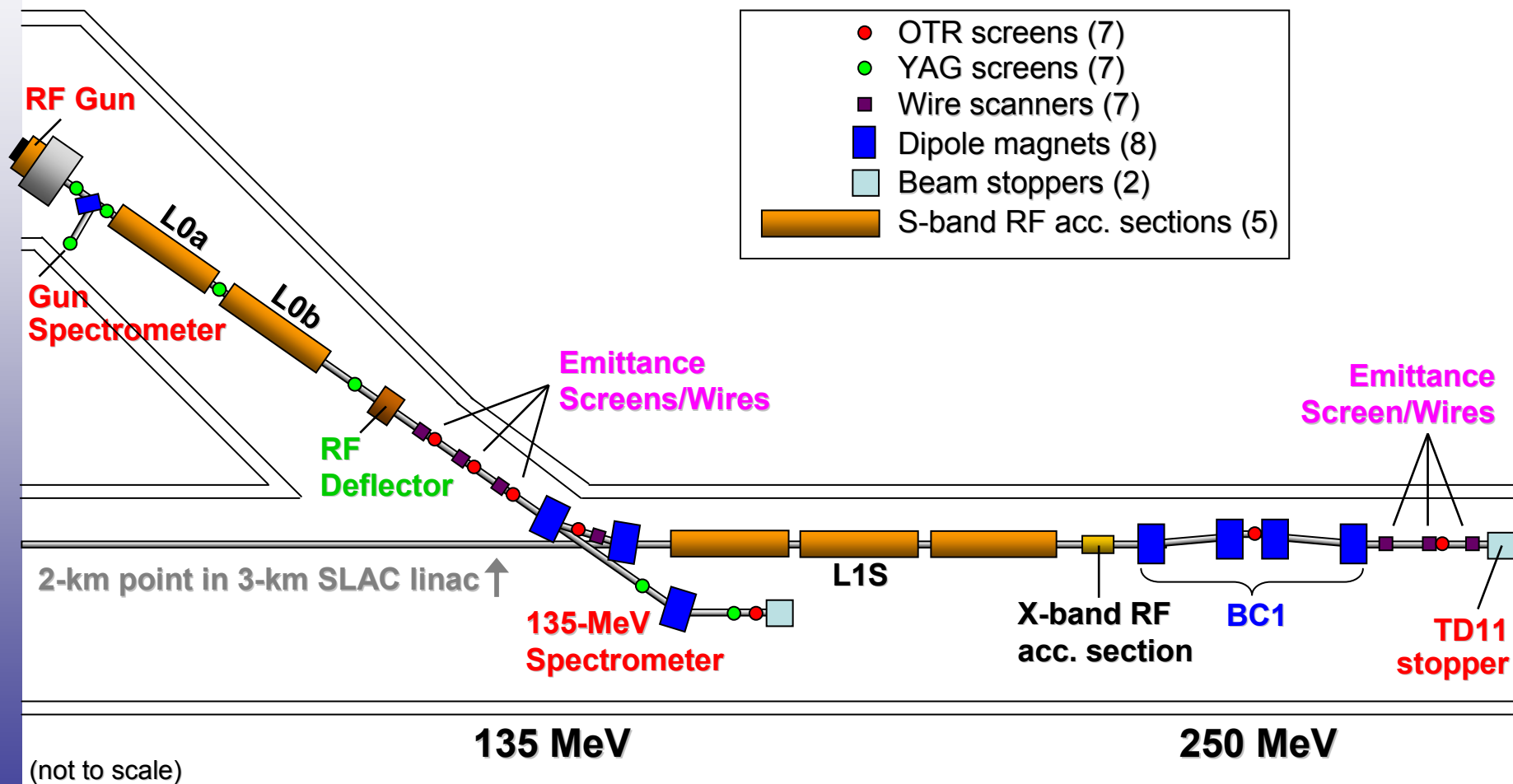




LCLS Injector Layout

Paul Emma

6 MeV



August 21-24, 2007

Magnetic Measurements At SLAC

Zachary Wolf

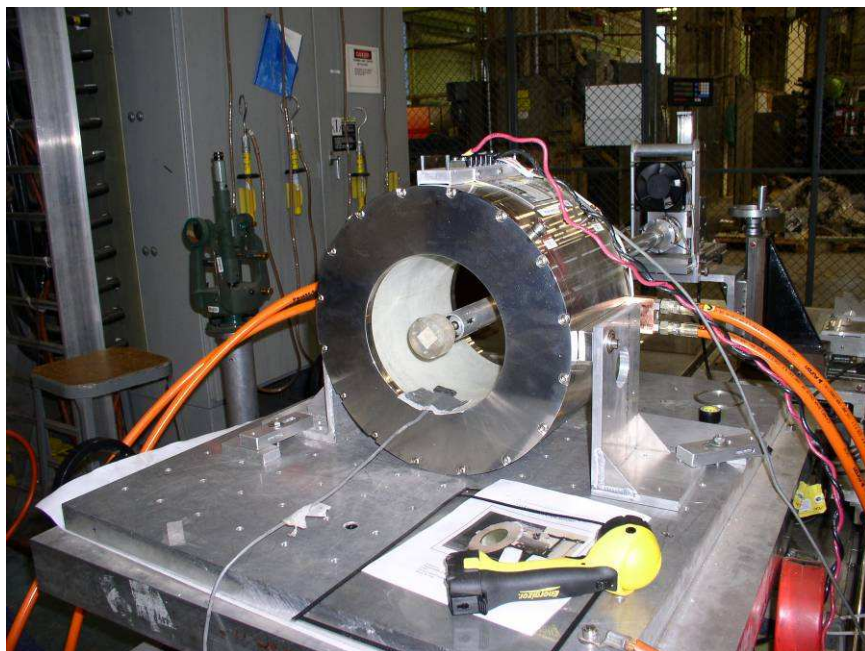
wolf@slac.stanford.edu



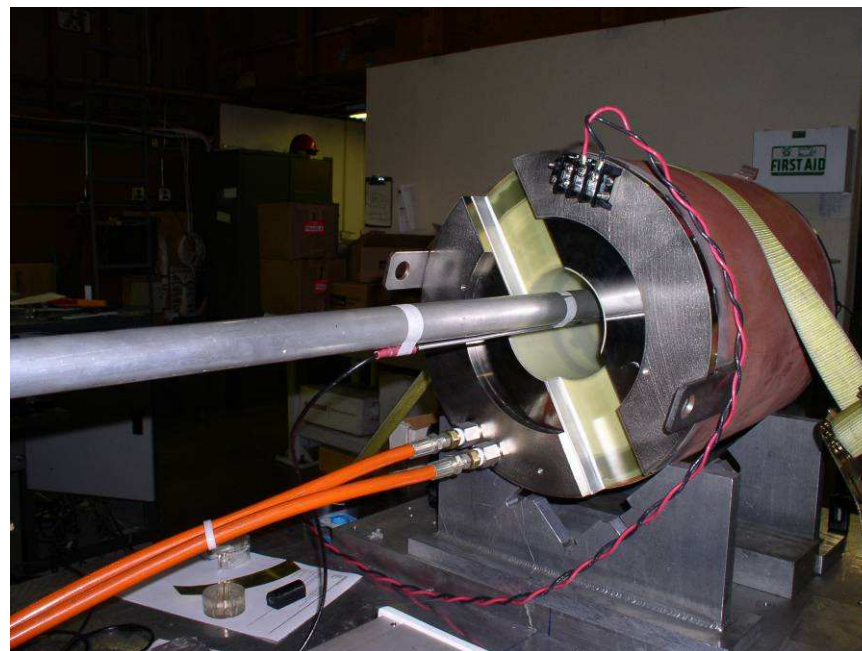


IMMW 15 August 21-24, 2007 Fermilab

Solenoid Measurements (Electron Gun)



Spinning Coil:
Transverse Fields,
Magnetic Axis,
Multipole Fields vs Z



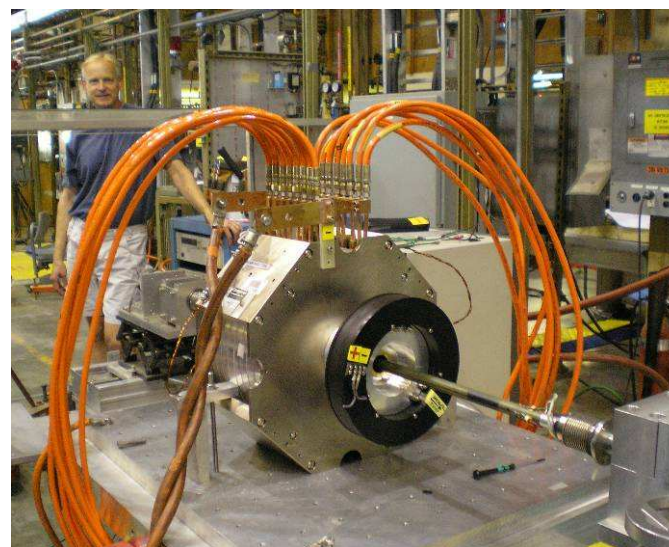
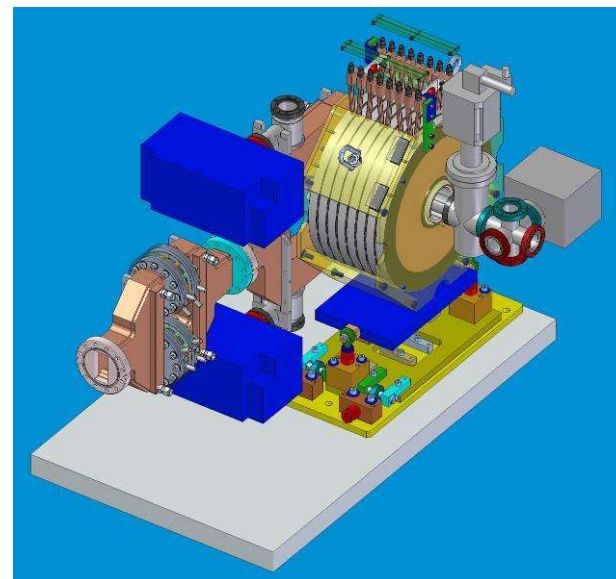
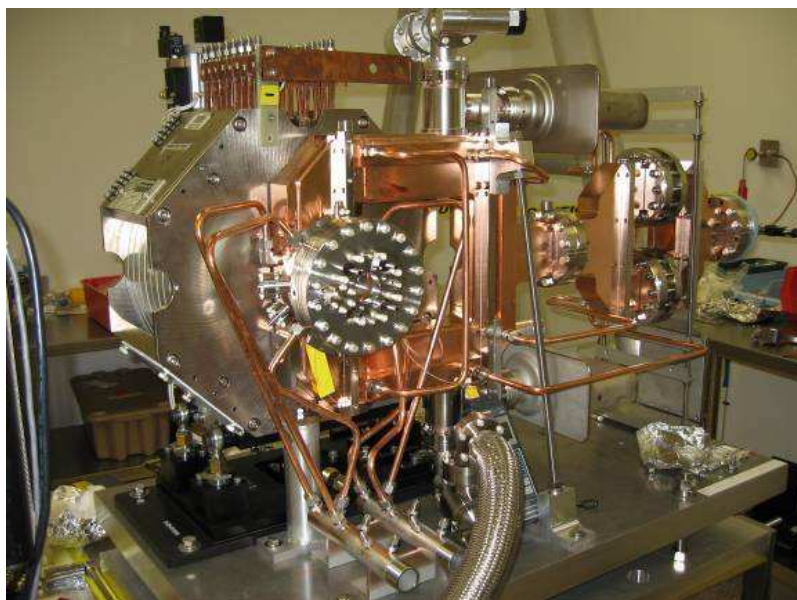
Hall Probe:
Axial Field

August 21-24, 2007

Magnetic Measurements At SLAC

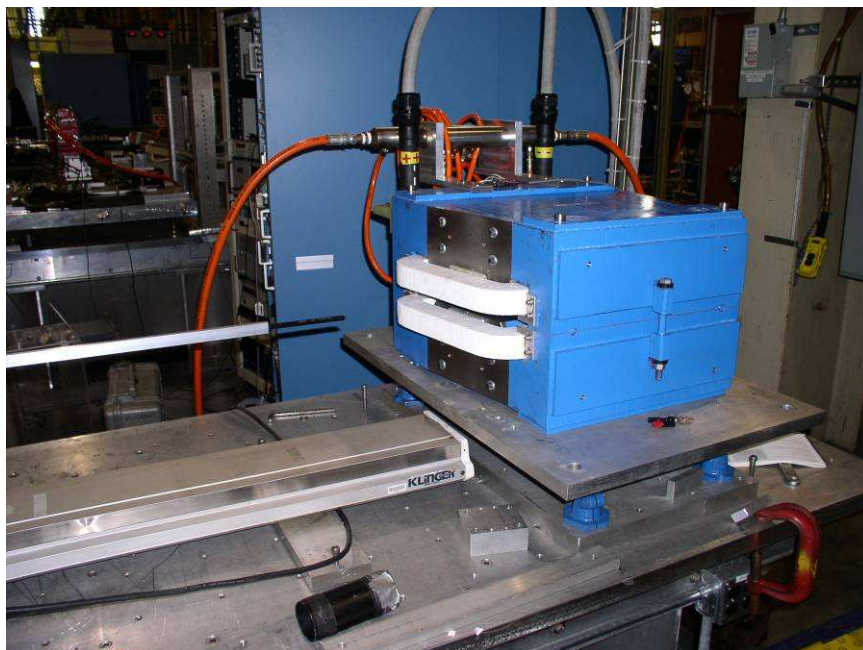


Assembled LCLS Gun





Dipole Measurements (Bends, Bunch Compressors)



Hall Probe Maps:
End Fields,
Map For High Curvature Beam



Stretched Wire:
Integrated Strength,
Field Uniformity



Quadrupole Measurements (Gun, Linac, Transport Line, Undulator)



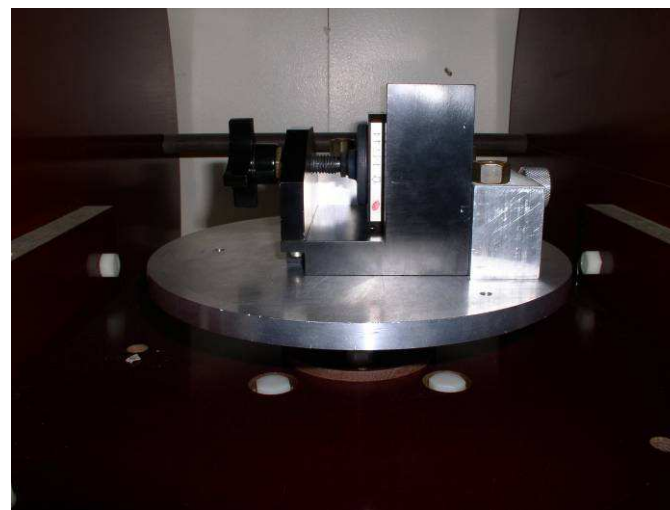
Stretched Wire:
Integrated Gradient,
Coil Calibration



Rotating Coil:
Strength vs Current,
Harmonics



Permanent Magnet Measurements



Helmholtz Coil:
Magnetic Moment Strength and Direction,
Radiation Damage Studies



Undulator Measurements



Two Test Benches



CMM

Magnetic Measurement Facility,
Detailed Talk To Follow



Undulator Quadrupole Measurements



Rotating Coil:
Strength vs Current,
Harmonics



Vibrating Wire:
Fiducialization



The Magnetic Measurement Future At SLAC

The B Factory shuts down in 2008.

ILC studies: quad center stability

Spear3, small upgrades

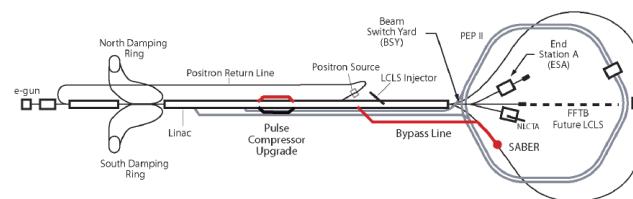
Accelerator studies, SABER

LCLS

check 3 undulators monthly

possible 2'nd undulator in tunnel

The mission appears to be shifting away from
HEP at SLAC.



South Arc Beam Experiment Region