

7th Hard X-Ray FEL Collaboration Meeting

26.10.2015 – 28.10.2015

Monday - October 26, 2015

09h00 – 13h00 Registration

Meeting room: HIT E.51 at ETH Hoenggerberg

10h00 (10') **Welcome** (Rafael Abela, PSI)

Joint session A: Facility Updates and Collaboration results

(session chair: Rafael Abela, PSI)

10h10 (25') **PAL-FEL** (In Soo Ko, PAL)

10h35 (25') **EU-XFEL** (Massimo Altarelli, European XFEL)

11h00 (25') **SwissFEL** (Hans Braun, PSI)

11h25 (30') **Coffee Break**

11h55 (25') **LCLS** (Mike Dunne, SLAC)

12h20 (25') **SACLA** (Tetsuya Ishikawa, SACLA)

12h45 (20') **Report on collaboration topics from last meeting** (Thomas Schietinger, PSI & Thomas Tschentscher, European XFEL)

13h10 – 14h30 Lunch (restaurant HEXACON)

Meeting room: HIL E.71/E.72 at ETH Hoenggerberg

Accelerator session A: Improvements of the performance of key-components

(session chair: Winfried Decking, DESY)

14h30 (20') **Reliability issue caused by Thyratrons -How to manage this issue at SACLA** (Takahiro Inagaki, SACLA)

14h50 (20') **Laser shaping for cathode drive beam and laser heater** (Daniel Ratner, SLAC)

15h10 (20') **Undulator taper control – why does the gain length increase over time?** (Heinz-Dieter Nuhn, SLAC)

15h30 (20') **Undulator layout optimization for novel FEL schemes** (Eduard Prat, PSI)

15h50 (10') **Discussion**

16h00 (30') **Coffee Break**

16h30 (20') **Critical diagnostics for longitudinal feedbacks** (Peter Peier, DESY)

16h50 (20') **Revers taper for polarization control** (Evgeny Schneidmiller, DESY)

17h10 (20') **Free-space optical laser as a phase reference for timing diagnostics** (Chang-Ki Min, PAL)

Meeting room: HIT E.51 at ETH Hoenggerberg

Photon Session A: Photon Beam Diagnostics

(session chair: Pavle Juranic, PSI)

14h30 (25') **Timing tool and spectral diagnostics operation** (Tetsuo Katayama, SACLA)

14h50 (25') **KB focus and wavefront characterization; Pulse duration diagnostics comparison** (Diling Zhu, SLAC)

15h30 (40') **Discussion: Soft/tender X-ray spectral Characterization** (SwissFEL/ LCLS)

16h00 (30') **Coffee Break**

Photon Session B: Beam Delivery

(session chair: Harald Sinn, European XFEL)

16h30 (15') **New offset mirror performance** (Lin Zhang, SLAC)

16h45 (15') **Upgrade of optical components and damage studies** (Kensuke Tono, SACLA)

17h00 (30') **Discussion: Optics metrology and tools for X-ray optics modelling** (PSI/SLAC/European XFEL)

19h00 – 21h30 Dinner @ Restaurant Uto Kulm, Zurich Uetliberg

Tuesday - October 27, 2015

Meeting room: HIL E.71/E.72 at ETH Hoenggerberg

Accelerator session B: CSR related effects and activities

(session chair: Hitoshi Tanaka, SACLA)

08h30 (20')	CSR effects observed at the dogleg beam transport to SACLA BL2 (Toru Hara, SACLA)
08h50 (20')	CSR suppression techniques (Yuantao Ding, SLAC)
09h10 (20')	Emittance growth in the bunch compressor of the SITF (Simona Bettoni, PSI)
09h30 (20')	Electron beam shaping - beam truncation (Yuantao Ding, SLAC)
09h50 (20')	Overview of existing modeling tools (Torsten Limberg, DESY)
10h10 (20')	Discussion
10h30 (30')	Coffee Break
11h00 (15')	Temporal profile measurements based on a passive streaker (Paolo Craievich, PSI)
11h15 (15')	Installation and plans for the 4 meter long wakefield dechirper at the LCLS (Patrick Krejcik, SLAC)
11h30 (30')	Discussion

12h00 Transport to PSI (meeting point: in front of HIT building)
13h00 – 14h00 Lunch @ PSI restaurant Oase

Meeting room: WHGA/001 at PSI

Accelerator session C: Towards full electron and photon phase space control

(session chair: Heung-Sik Kang, PAL)

14h00 (20')	Isolated monocyte X-ray pulse generation (Takashi Tanaka, SACLA)
14h20 (20')	Tapered FEL's, iSASE mode, online beam optimization (Juhao Wu, SLAC)
14h40 (20')	Large bandwidth mode at SwissFEL (Angela Saa Hernandez, PSI)
15h00 (30')	Coffee Break
Accelerator session D: How to gain more flexibility, robustness, and stability in the operation of FELs (session chair: Franz Josef Decker, SLAC)	
15h30 (20')	On-line modeling of self-field dominated bunches (Bolko Beutner, DESY)
15h50 (20')	Beam stability and energy jitter (Timothy Maxwell, SLAC)
16h10 (20')	Fundamental limits on pointing stability (Mikhail Yurkov, DESY)

16h30 – 19h00 Site Visit SwissFEL
19h00 – 21h15 Dinner @ PSI restaurant Oase
21h15 Transport back to Zurich (Zurich main station)

Meeting room: HIT E.51 at ETH Hoenggerberg

Photon Session C: Update on Experimental Stations and New Instruments

(session chair: Thomas Tschentscher, European XFEL)

08h30 (15')	Report on new results and current status (David Fritz, SLAC)
08h45 (15')	Report on X-ray split and delay optics (Makina Yabashi, SACLA)
09h00 (15')	Report on new results and current status (Soonnam Kwon, PAL)
09h15 (15')	Report on new results and current status (Christopher Milne, PSI)
09h30 (15')	Report on new results and current status (tbc, European XFEL)
09h45 (15')	Discussion: RIXS spectrometers (all)
10h00 (30')	Coffee Break
Photon Session D: Optical Laser Systems and Timing (session chair: William Schlottter, SLAC)	
10h30 (15')	Timing system upgrade; short optical laser pulse generation (Ryan Coffee, SLAC)
10h45 (15')	Details on experimental laser system (Christian Erny, PSI)
11h00 (15')	Experimental Laser and Diagnostics update (Andreas Galler, European XFEL)
11h15 (15')	Experimental Laser system details (Intae Eom, PAL)
11h30 (30')	Discussion: Finding time-zero (SACLA/ SLAC)

Meeting room: OSGA/EG06 at PSI

Photon Session E: Detectors

(session chair: Bernd Schmitt, PSI)

14h00 (10')	LPD performance (Philipp Lang, European XFEL)
14h10 (10')	Jungfrau status (Aldo Mozzanica, PSI)
14h20 (10')	ePix status (Philip Hart, SLAC)
14h30 (10')	MPCCD satus (Takaki Hatsui, SACLA)
14h40 (20')	Discussion: Detector use with high-power laser applications (European XFEL/ PSI)
15h00 (30')	Coffee Break
Photon Session F: Data Acquisition and Data Handling (Leonardo Sala, PSI)	
15h30 (20')	e-log status and plans; Data management policies and services (Amadeo Perazzo, SLAC)
15h50 (20')	Data management policies and services (Krzysztof Wrona, European XFEL)
16h10 (20')	Discussion: Data transfer Vs. local analysis (PSI/European XFEL)

Wednesday - October 28, 2015

Meeting room: HIT E.51 at ETH Hoenggerberg

Joint session B: From Chaos to Control

(session chair: Massimo Altarelli, European XFEL)

08h30 (20') **Operation experience gained at SLAC** (Franz Josef Decker, SLAC)

08h50 (20') **Operation experience gained at SACLA** (Hitoshi Tanaka, SACLA)

09h10 (20') **Operation experience gained at DESY** (Matthias Scholz, DESY)

09h30 (60') **Open Discussion**

10h30 (30') **Coffee Break**

Joint session C: Seeding

(session chair: Jerome Hastings, SLAC)

11h00 (20') **Status report from LCLS on seeding efforts** (Daniel Ratner, SLAC)

11h20 (20') **Status report from SACLA on seeding efforts** (Takahiro Inagaki, SACLA)

11h40 (20') **Plans from EU-XFEL on self-seeding** (Gianluca Geloni, EU-XFEL)

12h00 (30') **Open Discussion**

12h30 (30') **Summary and concluding remarks** (Rafael Abela, PSI)

13h00 **End of Meeting**