

# Scientific Program for the 8<sup>th</sup> Hard X-ray FEL Collaboration Meeting

**Monday, October 24, 2016**

**Joint Session A: Facility Updates I** (session chair: Dong-Eon Kim, PAL), **Auditorium at Science Building**

- 09:00 (10') **Welcome** (Ki-Bong Lee, PAL)
- 09:10 (20') **SwissFEL** (Hans Braun, PSI)
- 09:30 (20') **PAL-XFEL** (In Soo Ko, PAL)
- 09:50 (20') **European XFEL** (Massimo Altarelli, European XFEL)
- 10:10 (20') **SACLA** (Tesuya Ishikawa, SACLA)
- 10:30 (20') **LCLS** (Axel Brachmann, SLAC)
- 10:50 (30') Coffee Break

Facility Updates II (session chair: Tae-Yeong Koo, PAL)

- 11:20 (20') **New operation modes and on-line diagnostics at FLASH** (Stefan Düsterer, DESY)
- 11:40 (20') **Schedule and plans for European XFEL commissioning** (Winfried Decking, European XFEL)
- 12:00 (20') **LCLS-II Commissioning schedule and planning** (John Schmerge, SLAC)

12:30~14:00 Lunch

**Accelerator Session A: FEL technology - Source and Beam manipulation I** (session chair: Hitoshi Tanaka, SACLA), **Room 201, 2-nd floor of Administration Building**

- 14:00 (20') **Injector R&D Program at LCLS** (John Schmerge, SLAC)
- 14:20 (20') **LCLS Injector emittance optimization** (Feng Zhou, SLAC)
- 14:40 (20') **Development of C-band 2/3 pi-mode CG acceleration structures** (Yuji Otake, SACLA)
- 15:00 (20') **Dechirper experience at LCLS** (Alberto Lutman, SLAC)
- 15:20 (30') Coffee Break

FEL technology - Source and Beam manipulation II (session chair: Florian Loehl, PSI)

- 15:50 (20') **Performances of PAL-XFEL diagnostics system** (Changbum Kim, PAL)
- 16:10 (20') **Overview of collaborations for beam diagnostics with PSI involvement** (Nicole Hiller, PSI)
- 16:30 (20') **X-band deflectors for electron pulse length diagnostics** (Yuantao Ding, SLAC)
- 16:50 (20') **X-band solid-state amplifier development** (Hoon Heo, PAL)
- 17:10 (20') **XLEAP-Attosecond pulse manipulation**, Jerry Hastings, SLAC
- 17:30 (30') Open discussion

**Photon-A: Optics & diagnostics** (Session chair: Thomas Tschentscher, European XFEL), **Seminar Room, 1-st floor of Administration Building**

- 14:00 (30') Update: European XFEL optics, diagnostics and operation schemes (H. Sinn, European XFEL)
- 14:30 (25') X-ray optics (Makina Yabashi, SACLA)
- 14:55 (20') X-ray Optics (Bill Schlotter, LCLS)
- 15:15 (30') Coffee Break
- 15:45 (20') PAL-XFEL beamline pump laser & timing diagnostics (In Tae Eom, PAL-XFEL)
- 16:05 (20') Status of the SwissFEL optics (Uwe Flechsig, SwissFEL)
- 16:25 (15') Temporal diagnostics (Shigeki Owada, SACLA)
- 16:40 (15') A diamond crystal bender for spectral diagnostics (U. Bösenberg, European XFEL)
- 16:55 (20') PAL-XFEL GMD photon diagnostics (Soon Nam Kwon, PAL-XFEL)

- 17:15 (20') Laser timing and jitter diagnostics tools for SwissFEL experimental stations (Paul Beaud, SwissFEL)  
 17:35 (20') X-ray diagnostics (Yiping Feng, LCLS)

**Tuesday, October 25, 2016**

**Accelerator Session B:** FEL technology - Undulator and seeding, and Operation mode I (session chair: Winfried Decking, European XFEL), **Auditorium at Science Building**

- 08:30 (20') **Design strategies for Athos** (Sven Reiche, PSI)  
 08:50 (20') **Harmonic lasing in XFELs: results from FLASH** (Evgeny Schneidmiller, European XFEL)  
 09:10 (20') **Reverse taper experiment at FLASH** (Evgeny Schneidmiller, European XFEL)  
 09:30 (20') **Apple-X undulator for Athos and EU-XFEL (SASE 3)** (Thomas Schmidt, PSI)  
 09:50 (20') **LCLS Seeding R&D** (Jerry Hastings, SLAC)  
 10:10 (20') **Self-Seeding implementation at European XFEL** (Liu Shan, European XFEL)  
 10:30 (30') Coffee Break

FEL Operation and Commissioning (session chair: Heung-Sik Kang, PAL)

- 11:00 (20') **Multi-bunch operation at LCLS** (Franz-Josef Decker, SLAC)  
 11:20 (20') **Pulse-by-pulse control of linear accelerator at SACLA** (Hitoshi Tanaka, SACLA)  
 11:40 (20') **Machine Learning and automated tuning** (Daniel Ratner, SLAC)  
 12:00 (20') **High Level Application for commissioning & operation** (Raimund Kammering, European XFEL)  
 12:20 (30') Open discussion

12:50~14:00 Lunch

**Accelerator Session C:** FEL Commissioning I (session chair: Axel Brachmann, SLAC), **Room 201, 2-nd floor of Administration Building**

- 14:00 (20') **Beam commissioning of SACLA BL1 SX FEL driven by a compact dedicated linac** (Takahiro Inagaki, SACLA)  
 14:20 (20') **Commissioning results from European XFEL injector** (Matthias Scholz, European XFEL)  
 14:40 (20') **Experience with high power RF sources and RF conditioning** (Florian Loehl, PSI)  
 15:00 (30') Coffee Break  
 15:30 (20') **Undulator BBA & FEL commissioning** (Heung-Sik Kang, PAL)  
 15:50 (30') Open discussion

16:30 ~ 18:30 Site Tour of PAL-XFEL

18:30 ~ Dinner

**Photon-B:** Operation logistics (Session chair: Makina Yabashi, RIKEN), **Seminar Room, 1-st floor of Administration Building**

- 14:00 (20') First experiments – SFX & operation schemes (Jae Hyun Park, PAL-XFEL)  
 14:20 (20') First Experiments and User operation at SwissFEL (Luc Patthey, SwissFEL)  
 14:40 (20') Strategy for efficient and robust operation (Kensuke Tono, SACLA)  
 15:00 (40') Coffee Break  
 15:40 (15') Wavefront measurements at the SPB/SFX instrument (P. Vagovic, European XFEL)  
 15:55 (20') Operations (Diling Zhu, LCLS)

**Wednesday, October 26, 2016**

**Joint Session B:** Summary Reports and Collaboration results (session chair: Jerry Hastings, SLAC), Auditorium at Science Building

- 09:00 (20') **Summary Report of FEL technology: Source and Beam manipulation** (Hitoshi Tanaka, SACLA)
- 09:20 (20') **Summary Report of FEL technology - Undulator and seeding, and Operation mode** (Winfried Decking, European XFEL)
- 09:40 (20') **Summary Report of FEL Commissioning** (Axel Brachmann, SLAC)
- 10:00 (20') **Summary Report of “Photon -A: optics & diagnostics”** (Thomas Tschentscher, European XFEL)
- 10:20 (30') Coffee Break
- 10:50 (20') **Summary Report of “Photon -B: operation logistics”** (Makina Yabashi, RIKEN)
- 11:10 (20') **Report on collaboration topics from last meeting** (Hans Braun, PSI)
- 11:30 (30') **Open Discussion**
- 12:00 (10') **Closing** (In Soo Ko, PAL)

	October 24, 2016		October 25, 2016		October 26, 2016
<b>Morning Session</b> : Auditorium at Science Building	<b>09:00</b> <b>Welcome</b> <b>Joint Session A:</b> Facility Updates		<b>08:30</b> <b>Accelerator Session B:</b> FEL technology - Undulator and seeding, and Operation mode		<b>09:00</b> <b>Joint Session B:</b> Summary Reports and Collaboration results
<b>Lunch</b>	<b>12:30</b>		<b>12:50</b>		<b>12:00</b> Closing
<b>Afternoon Session</b>  <b>Accelerator:</b> Room 201 at Administration Building  <b>Photon:</b> Seminar room at Administration Building	<b>14:00</b> <b>Accelerator Session A:</b> FEL technology - Source and Beam manipulation	<b>14:00</b> <b>Photon -A:</b> optics & diagnostics	<b>14:00</b> <b>Accelerator Session C:</b> FEL Commissioning	<b>14:00</b> <b>Photon -B:</b> operation logistics	
			<b>16:30 Site Tour</b>		