“Kick Off Meeting for the Helmholtz International Beamline for Extreme Fields (HIBEF) at the European XFEL”

HZDR

HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF

DESY

"Kick Off Meeting for the Helmholtz International Beamline for Extreme Fields (HIBEF) at the European XFEL"

June 2nd – 5th
DESY, Hamburg

Final Schedule

Sunday June 2nd **Bldg. 5, Lobby of the DESY Auditorium**		
18:00 – 19:30	Registration and Reception	
Monday June 3rd ***Bldg. 28c, Flash Seminar Room***		
8:00 – 8:30	Registration	
8:30 – 8:50	Welcome	R. Sauerbrey (HZDR), H. Dosch (DESY)
8:50 – 9:25	Overview and Goals of HIBEF	T. Cowan (HZDR)
9:25 – 9:55	Status of the HED Instrument at the European XFEL	T. Tschentscher (European XFEL)
9:55 – 10:30	Coffee Break	
10:30 – 11:00	ELI	W. Sandner (ELI-DC)
Plenary Talks ***Chair: S. Toleikis*** ***Bldg. 28c, Flash Seminar Room***		
11:00 – 11:45	Strong field physics	Ch. Keitel (MPI-Heidelberg)
11:45 – 12:30	WDM and Plasmas	J. Wark (Oxford Uni.)
12:30 – 14:00	Lunch Break at the DESY Cafeteria	
Break Out Sessions I: 14:00 - 18:00 (see below)		

Poster Session		
18:30 – 22:00	Poster Session at DESY Bistro	
19:00	BBQ at DESY Bistro	

Break Out Sessions I: "Relativistic Plasmas and Damage" ***Discussion Leaders: C. Murphy, P. Neumayer, A. Froideval Zumbiehl*** ***Bldg. 25b, Rm. 109***		
14:00 – 14:15	X-Ray Phase Contrast Imaging of Shock Waves at an XFEL	A. Schropp (TU Dresden & SLAC)
14:15 – 14:30	X-Ray Thomson Scattering to study relativistic electron transport at XFEL	P. Neumayer (EMMI/GSI, FIAS)
14:30 – 14:45	Imaging of structure and dynamics with Coherent X-rays	C. Gutt (DESY)
14:45 – 15:15	Cascade Defect Dynamics and Evolution from Sub-picoseconds to milliseconds and Beyond Using HIBEF and XFEL	B. Larson (ORNL)
15:15 – 15:30	Investigation of Damage Dynamics of Matter Irradiated with Laser-produced Intense Particle Beams for Fusion Reactors	T. Yabuuchi (Osaka)
15:30 – 15:45	Fusion Related Scientific Proposals for HIBEF	J. Alvarez-Ruiz (UPM)
15:45 – 16:00	Open Discussion	
16:00 – 16:20	Coffee Break	
16:20 – 16:30	TBA	N. Woolsey (Uni. York)
16:30 – 16:40	TBA	R. Freeman / A. Krygier (OSU)
16:40 – 16:50	TBA	M. Zepf (HI Jena / QUB)
16:50 – 17:15	TBA	T. Kluge (HZDR)
17:15 – 18:00	Discussion	

Break Out Sessions I "Dynamic Compression/Lab Astro/WDM" ***Discussion Leaders: A. Higginbotham. M. McMahon, R. Redmer*** ***Bldg. 28c, Flash Seminar Room***		
14:00 – 14:05	Scope of the break out session	M. McMahon (Uni. Edinburgh)
14:05 – 14:30	TBA	R. Collins (LLNL)
14:30 – 14:45	Planets in the laboratory: a study of the creation of high-pressure states via dynamic compression	A. Higginbotham (Uni. Oxford)
14:45 – 15:00	Diffraction Studies of Exotic Structural Behaviour in High Density Alkali Metals	E. McBride (Uni. Edinburgh)
15:00 – 15:15	Planetary Physics	R. Redmer (Uni. Rostock)
15:15 – 15:30	The impact of transport properties on planetary structure and evolution	F. Sohl (DLR)
15:30 – 15:50	Dynamic compression/heating of molecular solids using the dynamic diamond anvil cell (dDAC): Implications for transition kinetics and planetary physics	W. Evens (LLNL)
15:50 – 16:00	Coffee Break	
16:15 – 16:30	Study of structural and bonding state of matter under extreme static pressures (>400 GPa) and high temperatures (up to 10,000 K) created in the single-pulse laser heated double-stage diamond anvil cell	Z. Konopkova (DESY)
16:30 – 16:45	Phase diagram and equation of state of MgO and $MgSiO_3$ to TPa pressures: A window into the deep interior of extrasolar planets	S. Speziale (GFZ)
16:45 – 17:00	Crystallographic studies of dynamics of shock compressed quartz and its implication for meteorite impacts on earth and other planetary bodies	A. Denilevski (Uni. Freiburg)
17:00 – 18:00	Discussion	

Break Out Sessions I: "Strong Fields" ***Discussion Leaders: B. Kaempfer, G. Gregori*** ***Bldg. 25f, Rm. 456***		
14:00 – 14:15	Pair production in the subcritical region: quantum kinetics	R. Alkofer (Uni. Graz)
14:15 – 14:30	Pair production in the subcritical region: optimal control	F. Kohlfurst (Uni. Graz)
14:30 – 15:00	Mimicking strong gravity	R. Bingham (Uni. Strathclyde and RAL)
15:00 – 15:20	Pair production: dynamical Schwinger process	D. Blaschke (Uni. Wroclaw)
15:20 – 15:40	Classical and quantum electrodynamics effects in intense laser fields	A. DiPiazza (MPI Heidelberg)
15:40 – 16:00	Probing light by light	T. Heinzl (Plymouth Univ.)
16:00 – 16:20	Coffee Break	
16:20 – 16:40	Zeptosecond streak imaging utilizing the Schwinger effect	A. Ipp (TU Wien),
16:40 – 17:00	Signatures of QED vacuum nonlinearities	F. Karbstein (Uni. Jena and HIJ)
17:00 – 17:20	QED and physics beyond the standard model	C. Rizzo (CNRS, LNCMI Toulouse),
17:20 – 17:40	The computational challenge of strong field physics	H. Ruhl, N. Elkina, S. King, P. Bohl (LMU Munich)
17:40 – 18:00	Birefringence: feasibility at XFEL	H.P. Schlenvoigt (HZDR)

Break Out Sessions I: "High Magnetic Field" ***Discussion Leaders: M. v. Zimmermann, J. Strempfer*** ***Bldg. 47c, Rm. L110, PETRA III Seminar Room***		
14:00 – 14:25	Pulsed magnets designs for synchrotrons, neutrons sources and intense lasers	J. Beard (LNCMI)
14:25 – 14:50	Pulsed magnetic fields up to 30T at the ESRF	C. Detlefs (ESRF)
14:50 – 15:15	Unconventional superconductivity and charge density wave order in high magnetic fields	J. Chang (EPFL)
15:15 – 15:40	Diffraction studies of complex matter in pulsed magnetic fields	J. Geck (IFW)
15:40 – 16:20	Coffee Break	
16:20 – 16:45	Strong electric and magnetic fields: from DC to THz control	A. Cavalleri (CFEL)
16:45 – 17:10	Efficient THz-Generation with Optical Sources	O. Muecke (CFEL)
17:10 – 17:35	X-ray diffraction and spectroscopy in very high magnetic fields	C. Strohm (ESRF)
17:35 – 18:00	Materials Science in the strong field limit	I. Robinson (Uni. Oxford)

Tuesday June 4th		
Plenary Talks ***Chair: H. Franz*** ***Bldg. 28c, Flash Seminar Room***		
8:30 – 9:15	Materials research at high magnetic fields	J. Wosnitza (HZDR)
9:15 – 10:00	Dynamic Compression	M. McMahon (Edinburgh)
10:00 – 10:30	Coffee Break	
10:30 – 11:15	Relativistic Plasmas and Damage	Prof. Peter Norreys (Oxford Uni. & CLF)
11:15 – 11:45	Science combining high energy lasers & SACLA	R. Kodama (Osaka)
11:45 – 12:00	The SFX proposal	H. Chapman (DESY/CFEL)
12:00 – 12:15	The hRIXS proposal	A. Foehlisch (HZB)
12:15 – 14:00	Lunch	
Science Break Out Sessions II: 14:00 – 16:00 (see below)		
16:00 – 16:30	Coffee Break	
Technical Break Out Sessions 16:30– 18:30 (see below)		
18:45	Bus leaving for Lutter & Wegener	
19:15 – 22:15	Banquet at Lutter & Wegener	

Science Break Out Sessions II: "Relativistic Plasmas and Damage" *Discussion Leaders: C. Murphy, P. Neumayer, A. Froideval Zumbiehl* *Bldg. 25b, Rm. 109*		
14:00 – 16:00	Open Discussions	All

Science Break Out Sessions II: "Dynamic Compression/Lab Astro/WDM" *Discussion Leaders: A. Higginbotham. M. McMahon, R. Redmer* *Bldg. 28c, Flash Seminar Room*		
14:00 – 14:15	WDM studies: coupling XFEL and high energy lasers	M. Harden (LULI)
14:15 – 14:30	Proposal for full characterization of WDM samples: experiment and modeling	O. Peyrusse (CELIA)
14:30 – 14:45	Measurement of the carbon melting line using isochoric heating and shock-compression	D. Kraus (TU Darmstadt)
14:45 – 15:00	Stopping power of hydrogen in warm dense matter	D. P. Higginson (LULI)
15:00 – 15:15	Diagnostics of solid-density high z (Ti, Fe) plasma produced by utra-intense XFEL pumping	S. A. Pikuz (Russian Academy of Science)
15:15 – 15:30	Paul trap at HIBEF	P. Hilz (LMU Munich)
15:30 – 16:00	Final Discussion & Instrumentation	

Science Break Out Sessions II: "Strong Fields" ***Discussion Leaders: B. Kaempfer, G. Gregori*** ***Bldg. 25f, Rm. 456***		
14:00 – 14:25	Pair production processes	C. Mueller (Uni. Düsseldorf)
14:25 – 14:50	Dynamically assisted Sauter-Schwinger effect	R. Schutzhold (Uni. Düsseldorf)
14:50 – 15:15	Pair Plasma Production from Matter and Vacuum	A. Takabe (ILE, Osaka Univ.)
15:15 – 15:40	Pair production in laser fields?	H. Reiss (MBI Berlin)
15:40 – 16:00	Discussion of Summary	

Science Break Out Sessions II: "High Magnetic Fields" ***Discussion Leaders: M. v. Zimmermann, J. Strempfer*** ***Bldg. 47c, Rm. L110, PETRA III Seminar Room***		
14:00 – 14:25	Pulsed-field technology for experiments at XFEL	T. Herrmannsdoerfer (HZDR)
14:25 – 14:50	Competing interactions in complex oxides	P. Wochner (MPI)
14:50 – 16.00	Discussion Instrumentation	

Technical Break Out Sessions: "X-ray Instrumentation" ***Discussion Leader: U. Zastrau*** ***Bldg. 25f, Rm. 456***		
16:30 – 16:45	Overview of required and proposed instruments	U. Zastrau
16:45 – 17:00	XFEL contribution on detector issues	TBA
17:00 – 18:00	Selected short (10 min) talks from the audience	TBD
18:00 – 18:25	Open discussion	N. N.
18:25 – 18:30	Conclusion	U. Zastrau

Technical Break Out Sessions: "Large Optical Laser and Plasma Diagnostics" ***Discussion Leaders: U. Schramm, V. Bagnoud, H. P. Schlenvoigt*** ***Bldg. 28c, Flash Seminar Room***		
16:30 – 18:30	***"Large Optical Laser and Plasma Diagnostics"***	U. Schramm, V. Bagnoud, H. P. Schlenvoigt

Technical Break Out Sessions: "Data Analysis and Simulations" ***Discussion Leader: M. Bussmann*** ***Bldg. 25b, Rm. 109***		
16:30 – 16:35	Introduction	M. Bussmann (HZDR)
16:35 – 17:00	Data Acquisition, Management and Scientific Computing at XFEL	C. Youngman (EXFEL)
17:00 – 17:15	Fast data analysis using GPUs	G. Juckeland (TU Dresden)
17:15 – 17:30	The HIBEF Science Gateway	R. Grunzke (TU Dresden)
17:30 – 17:45	Atoms and ions in intense ultrashort laser pulses	A. Saenz (Humboldt Uni. Berlin)
17:45 – 18:00	Prague activities on simulations of super-intense laser-plasma interactions	J. Limpouch (Czech TU Prague)
18:00 – 18:10	Petflop Plasma Simulations	A. Debus (HZDR)
18:10 – 18:30	Discussions	M. Bussmann (HZDR)

Technical Break Out Sessions:* "Targets"** ***Discussion Leader: R. Stephens ***Bldg. 47c, Rm. L110, PETRA III Seminar Room***		
16:30 – 18:30	***"Targets"***	R. Stephens (Uni. Pennsylvania , Philadelphia)

Wednesday June 5th		
Summary Break Outs Session ***Chair: H. P. Liermann*** ***Bldg. 28c, Flash Seminar Room***		
8:30 – 8:45	Summary "Relativistic Plasmas and Damage"	C. Murphy, P. Neumayer, A. Froideval Zumbiehl
8:45 – 9:00	Summary "Dynamic Compression/Lab Astro/WDM"	A. Higginbotham. M. McMahon, R. Redmer
9:00 – 9:15	Summary "Strong Fields"	B. Kaempfer, G. Gregori
9: 15 – 9:30	Summary "High Magnetic Fields"	M. v. Zimmermann, J. Strempfer
9:30 – 9:45	Summary "X-ray Instrumentation"	U. Zastrau
9:45 – 10:00	Summary "Large Optical Laser and Plasma Diagnostics"	U. Schramm, V. Bagnoud, H. P. Schlenvoigt
10:00 – 10:15	Summary "Data Analysis and Simulations"	M. Bussmann
10:15 – 10:30	Summary "Targets"	R. Stevens
10:30 – 10:45	Coffee Break	
Governing Model for the HIBEF ***Chair: T. Tschentscher*** ***Bldg. 28c, Flash Seminar Room***		
10:45 – 11:15	Governing Model for the HIBEF	T. Cowan (HZDR)
Summary ***Chair: T. Cowan*** ***Bldg. 28c, Flash Seminar Room***		
11:15 – 12:30	Final Discussion	T. Cowan (HZDR)
12:30 –13:00	Concluding Remarks	T. Cowan (HZDR)

Further Information

Poster session:
The poster session will take place in the DESY canteen on Monday, 3 June at 18.00.

Conference Dinner:
The conference dinner will take place at Lutter&Wegener, Große Elbstraße. There will be a shuttle from DESY to the restaurant, starting at the FLASH hall at 18.30h.

W-Lan:
There is a special W-Lan for this workshop
Name/SSID: HIBEF
Key: AbciHunen8

Lunch:
You may have your lunch in the DESY canteen, Bldg. 9

Cash machine:
There is a cash machine in Bldg. 9

Map of DESY Campus and Location of Venues.