

# **39th International Workshop on High Energy Density Physics with Intense Ion and Laser Beams**

**January 27<sup>th</sup> - February 2<sup>nd</sup>, 2019**

**Darmstädter-Haus (Waldemar Petersen Haus)**

**Hirschegg, Austria**



**P r o g r a m**

# SAVE THE DATE

## Shock-wave meeting for PRIOR@FAIR

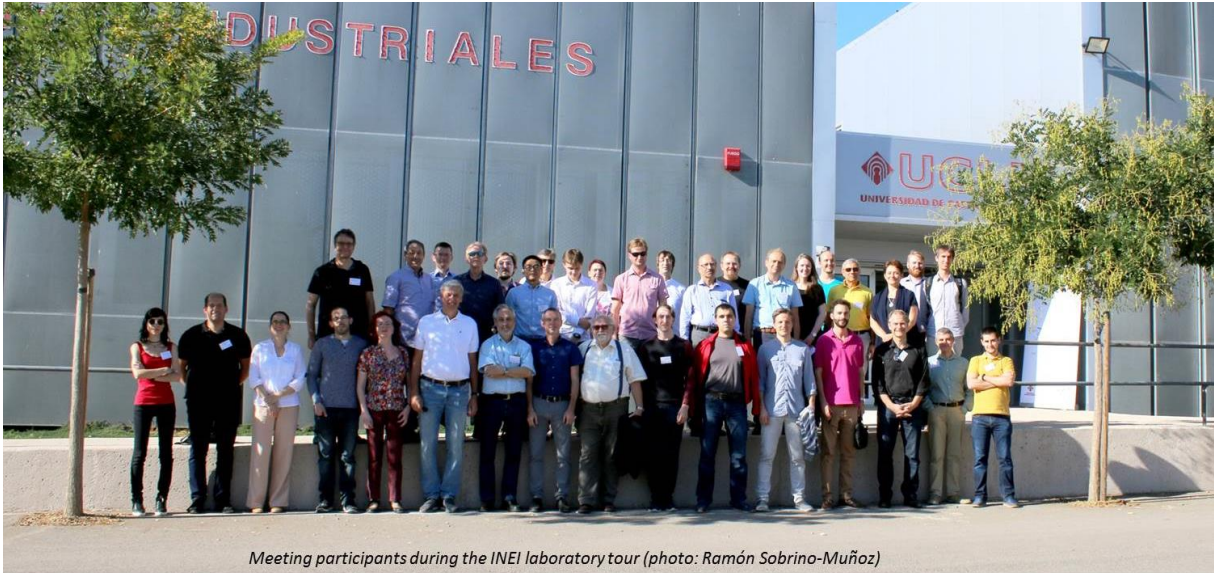
April 24<sup>th</sup> – 26<sup>th</sup>, 2019

Freiberg, Sachsen, Germany

## HED@FAIR Annual Meeting

June 5<sup>th</sup> – 7<sup>th</sup>, 2019

Moscow, Russia



*Meeting participants during the INEI laboratory tour (photo: Ramón Sobrino-Muñoz)*

# Monday (January 28)

Start	Duration	Speaker	Title
<b>Session 1: FAIR (Chair: D.H.H. Hoffmann)</b>			
8:30	00:20	Golubev/Hoffmann	Opening
8:50	00:20	GOLUBEV, Alexander	Status of FAIR (Status of the HED@FAIR collaboration)
9:10	00:20	NEFF, Stephan	Facilities for HED and WDM experiments at FAIR
9:30	00:20	XIAO, Guoquin	Prospect of WDM @ HIAF in Huizhou
9:50	00:20	KAIKANOV, Marat	Recent progress of INURA pulsed ion accelerator scientific program at Nazarbayev University
<b>10:10</b>	<b>00:30</b>	<b>Coffee break</b>	
<b>Session 2: Theory / Lab-Astro (Chair: I. Ioselevskiy)</b>			
10:40	00:20	KLAMMES, Sebastian	Very cold and very short ultra-relativistic heavy-ion bunches from the FAIR SIS100 for plasma physics experiments
11:00	00:20	TAHIR, Naeem Ahmad	High Energy Density Physics Studies at the HED@FAIR Program
11:20	00:20	PIRIZ, Antonio R.	Magneto-Rayleigh-Taylor instability in an elastic slab
11:40	00:20	PIRIZ, Sofia	Magnetic field and elasticity competition effect in magneto-Rayleigh-Taylor instability
12:00	00:20	BRET, Antoine	Density jump as a function of magnetic field for parallel collisionless shocks in pair plasmas
<b>12:20</b>		<b>Lunch break</b>	
<b>Session 3: High Energy Density / Warm-Dense Matter I (Chair: K. Schoenberg)</b>			
17:00	00:20	SPILLER, Peter	Status of FAIR Subproject SIS100 and SIS18
17:20	00:20	EFREMOV, Vladimir	Perspective nanostructured targets for study of matter behavior under high energy ions irradiation
17:40	00:20	ROEPKE, Gerd	Ionization potential depression and Pauli blocking in degenerate plasmas at extreme densities
18:00	00:20	KRASIK, Yakov	Electrical explosion of wires and wires arrays in water and glycerol
18:20	00:20	RAMAKRISHNA, Kushal	Ab-initio dielectric response function of diamond and other relevant high pressure phases of carbon
18:40	00:20	LÖTZSCH, Robert	Measurement of electric fields in dense plasmas via forbidden-line satellites
<b>19:00</b>		<b>Dinner</b>	
<b>20:30</b>		<b>HED@FAIR Collaboration Board meeting</b>	

## Tuesday (January 29)

Start	Duration	Speaker	Title
<b>Session 4: PHELIX (Chair: M. Roth)</b>			
8:30	00:20	BAGNOUD, Vincent	Operation of PHELIX with random phase plates
8:50	00:20	BRABETZ, Christian	PHELIX update and overview
9:10	00:20	MAJOR, Zsuzsanna	A High-Energy Laser Beamline – from PHELIX to the HHT-cave at GSI
9:30	00:20	HORNUNG, Johannes	Recent progress on proton acceleration with PHELIX
9:50	00:20	ROSMEJ, Olga	Generation of super-ponderomotive electrons in interaction of relativistic laser pulses with long scale near critical plasmas.
<b>10:10</b>	<b>00:30</b>	<b>Coffee break</b>	
<b>Session 5: ICF (Chair: A. Piriz)</b>			
10:40	00:20	GLENZER, Siegfried	Resolving the ongoing controversy about the conductivity of warm dense Aluminum
11:00	00:20	CHRISTOPHERSON, Alison	Thermonuclear Ignition and the Onset of Propagating Burn in Inertial Fusion
11:20	00:20	KRASA, Josef	CPA-Laser Pulses for Non-Thermal Initiation of Laser-Boron-Fusion
11:40	00:20	LAN, Ke	Octahedral spherical Hohlraum for Rev. 6 NIF beryllium capsule
12:00	00:20	SCHOENBERG, Kurt	Future Plans for Extreme Matter Research at Los Alamos: the Dynamic Mesoscale Materials Science Capability (DMMSC, formerly known as MaRIE)
<b>12:20</b>		<b>Lunch break</b>	
<b>Session 6: Laser Acceleration I (Chair: T. Kühl)</b>			
17:00	00:20	RAMAKRISHNA, Bhuvanesh	Investigation of Kinetic Instabilities in Laser Plasma
17:20	00:20	ZIMMER, Marc	Prospects of Laser Based Neutron Sources for Neutron Resonance Spectroscopy
17:40	00:20	KLEINSCHMIDT, Annika	Towards Neutron Resonance Imaging with Laser-driven Neutron Sources
18:00	00:20	MEYER-TER-VEHN, Jürgen	On photon absorption in high-energy-density matter
18:20	00:20	COBOS, Francisco	Linear ripple growth of the contact surface in Richtmyer-Meshkov like flows
<b>19:00</b>		<b>Hüttenabend at Sonna Alp with Dinner</b>	

## Wednesday (January 30)

Start	Duration	Speaker	Title
<b>Session 7: Relativistic laser plasma interaction II (Chair: V. Bagnoud)</b>			
8:30	00:20	HEGELICH, Bjoern	Manuel First experiments at the 4PW laser at the Center for Relativistic Laser Science
8:50	00:20	ANDREEV, Nikolay	Multistage wakefield electron acceleration to high energies
9:10	00:20	ZÄHTER, Sero	Generation and characterisation of the super-ponderomotive electrons in relativistic laser interaction with near critical density plasmas
9:30	00:20	SAVEL'EV, Andrey	Collimated electron bunches from relativistic laser-plasma interaction at short scale length artificial preplasma
9:50	00:20	KARSCH, Stefan	High-intensity laser-driven electron beams and X-ray sources
<b>10:10</b>	<b>00:30</b>	<b>Coffee break</b>	
<b>Session 8: Heavy ion stopping (Chair: A. Golubev )</b>			
10:40	00:20	ROTH, Markus	A LOEWE international center for nuclear photonics
11:00	00:20	ZHAO, Yongtao	Low energy heavy ion stopping in plasma
11:20	00:20	METTERNICH, Martin	Energy Loss of Laser-Driven Heavy Ion Beams in Laser-Generated Plasma
11:40	00:20	HE, Bin	Time-dependent simulation of the energy loss experiment for alpha particles moving in discharged H plasmas
12:00	00:20	CHENG, Rui	Low energy ions - plasma interaction at HIRFL
<b>12:20</b>		<b>Lunch break</b>	
<b>17:00</b>	1:30	<b>Poster session</b>	
<b>19:00</b>		<b>Conference Dinner</b>	

## Thursday (January 31)

Start	Duration	Speaker	Title
<b>Session 9: Laser Acceleration II (Chair: S. Glenzer)</b>			
8:30	00:20	VEYSMAN, Mikhail	Analytical models for optical and transport properties of metals heated rapidly by laser pulses of arbitrary frequencies
8:50	00:20	PUKHOV, Alexander	Stable Particle Acceleration in Coaxial Plasma Channels
9:10	00:20	OHLAND, Jonas Benjamin	Effects of Low Order Aberrations on Laser beams with Orbital Angular Momentum in the Far field
9:30	00:20	NEUMAYER, Paul	Properties of laser-driven hard x-ray sources over a wide range of laser intensities
9:50	00:20	VORBERGER, Jan	Energy relaxation and electron phonon coupling in laser heated solids
<b>10:10</b>	<b>00:30</b>	<b>Coffee break</b>	
<b>Session 10: High Energy Density / Warm-Dense Matter II (Chair: S. Neff )</b>			
10:40	00:20	IOSILEVSKIY, Igor	On perspectives of HIB experimental study of non-standard unexplored WDM phase transitions
11:00	00:20	NIKOLAEV, Dmitry	Perspectives for novel research of HED matter properties at FAIR
11:20	00:20	KANG, Wei	Electronic properties of warm dense matter for low and medium Z Atoms
11:40	00:20	KHISHCHENKO, Konstantin V	Multiphase equation of state for chromium at high pressures and temperatures
12:00	00:20	SKOBLIAKOV, Alexey	The Monte-Carlo numerical simulation of future experiments for HED at FAIR.
<b>12:20</b>		<b>Lunch break</b>	
<b>Session 11: Laser Acceleration III (Chair: N. Andreev )</b>			
17:00	00:25	TEBARTZ, Alexandra	In Situ Target Creation for Laser-Driven Ion Acceleration
17:25	00:20	WENG, Suming	Plasma-based magneto-optics: magnetic controlling of high-power laser pulses and their interactions with plasmas
17:45	00:20	CSERNAI, Lazlo P.	Radiation dominated implosion with flat, cylindrical target
18:05	00:20	MARON, Yitzhak	Determination of the ion temperature in a high-energy-density plasma using Stark effect
18:25	00:15	JAHN, Diana	Achieving highest proton intensities and towards experiments with the LIGHT beamline
<b>19:00</b>		<b>Dinner</b>	

## Friday (February 1)

Start	Duration	Speaker	Title
<b>Session 12: Laser Acceleration IV(Chair: Y. Zhao)</b>			
9:00	00:20	ROEDEL, Christian	Angular streaking of high harmonic radiation from relativistically oscillating mirrors
9:20	00:20	RETHFELD, Bärbel	Band Occupation and Optical Response of Gold far from Equilibrium
9:40	00:20	WEBER, Sebastian	Electron-phonon coupling in laser-induced nonequilibrium states of solids
10:00	00:20	REN, Jieru	Full particle in cell simulation of bremsstrahlung emission in relativistic laser solid interaction: effect of target material and thickness on the angular distribution characteristic
10:20	00:20	LEE, Bo Ram	Argon cluster interaction at different gas densities with ultra-intense fs laser pulse at CoReLS
10:40	00:20	ULRICH, Andreas	Experimental concepts for studying particle beam induced light emission
11:00	00:20	HAMPF, Raphael	Optical beam diagnostics for high intensity heavy ion beams
11:20	00:20	KRASIK, Yakov	Self-propagation of an ultra-high power sub-nanosecond microwave beam in neutral gas and preliminarily formed plasma
11:40	00:20	HOFFMANN, Dieter	ACCELERATOR Driven High Energy Density Science - Activation of structural components of high intensity accelerators
<b>12:00</b>		<b>End</b>	

## Poster session (Wednesday, 17:00-18:30)

1	ZOBUS, Yannik	Upgrade of the PHELIX uOPA fiber amplifier
2	CHRIST, Philipp	Time-resolved interferometric diagnostics on a theta-pinch plasma
3	SADYKOVA, Saltanat	Dispersion relations for the surface wave and the Brewster wave on a surface of a highly absorbing medium
4	ZAHN, Nadiya	Thermoluminescence detector-based 10-channel spectrometer for detection of electrons from relativistic laser-produced plasmas
5	MO, Chongjie	First-Principles Methods for X-ray Thomson Scattering Diagnostics in Warm Dense Matter
6	CHEN, B. Z.	PIC Simulation of Sausage Instability and Kink Instability of Intense Proton Beams in Plasmas
7	LIU, Ruifeng	Generalized photon sieve: fine control of complex field with simple pinhole arrays
8	GAVRILIN, Roman	Ion stopping in hydrogen plasma experiment at linear accelerator at ITEP
9	PAUW, Viktoria	PIC Simulation of Exploding Plasma Microtargets at different densities
10	YU, Xiao	Ablation of plastics by intense pulsed ion beam and its shielding on energy deposition
11	NIKULIN, Dmitry	Electron beam induced emission spectra recorded in the context of optical beam diagnostics