

Schedule for the RPHDM 2018 Workshop

Talk durations 30 min or 20 min, including discussion

Monday 22.10.18

Welcome 9:00

E. Weckert (Photon Science Director at DESY) & T. Tschentscher (Scientific Director at EuXFEL)

30'

Session 1 9:30-11:10 *Plasma Spectroscopy*

Chairperson: R. W. Lee

E. Stambulchik

Forbidden-Line Satellites as a Probe of HED Plasmas

30'

C. Brown Absorption spectroscopy of low-density, low-temperature and low-Z plasmas

30'

O. Renner X-ray spectroscopic characterization of hot electron evolution inside kJ-laser irradiated Cu foil

20'

F. Dipti Analysis of Nike x-ray spectra from highly-charged ions of Al and Si

20'

Monday 22.10.18

Session 2 11:30-13:00 *Plasma Theory I*

Chairperson: U. Zastra

J. Meyer-Ter-Vehn New results on photon absorption in high-energy-density matter
30'

H. Kitamura Femtosecond thermalization dynamics of keV electrons in metals
20'

Z. Moldabekov Structure factor of strongly coupled ions in dense quantum plasmas
20'

F. Gilleron Statistical modeling of Stark-broadened levels and lines of hydrogenic system
20'

Monday 22.10.18

Session 3 14:00-16:00 *Plasma Theory II*

Chairperson: F. Wang

- J. Yuan Enhanced Photoionization Cross Section of Ions In Hot Dense Plasma By the Temporal Space Localization of the Ejected Electron
30 '
- C. Gao Multiple-core hole states production in the interaction of solid-state density plasmas with a relativistic optical and x-ray free electron laser
30 '
- G. Williams The impact of free electron degeneracy on collisional rates in plasmas
20 '
- Y. Hou Multi-ion molecular dynamics and elastic X-ray Thomson scattering of dense plasmas
20 '
- P. Sterne Ionization Potential Depression Calculations for Compressed Materials
20 '

Monday 22.10.18

Session 4 16:30-18:20 *Plasma Simulations*

Chairperson: Y. Ralchenko

S. Hansen Review of the 10th Non-LTE Code Comparison Workshop
30'

H. K. Chung Recent developments of the generalized collisional-radiative model using screened
hydrogenic configurations for high energy density physics applications
20'

I. Golovkin New Prism EOS and Opacity Tables with NLTE Atomic Kinetics
20'

I. Vichev THERMOS Toolkit: Software and databases package for properties calculations of LTE
and Non-LTE plasmas
20'

M. Sherrill Pursuing Large Scale Self-Consistent Atomic Kinetic and Radiation Transport
Simulations
20'

Tuesday 23.10.18

Session 5 9:00-11:10 *Astrophysics & Magnetized Plasmas*

Chairperson: S. Toleikis

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|------------|---|
| J. Bailey | Benchmark experiments for the radiative properties of astrophysical plasmas
30' |
| S. Rose | Observing the two-photon Breit-Wheeler process for the first time
30' |
| R. Mancini | Plasma heating and atomic kinetics of laboratory photoionized plasmas
30' |
| R. Doron | Magnetized plasma compression: measurement of the compressed magnetic field and what can we learn from it?
20' |
| S. Ferri | Atomic physics developments for the characterization of highly-magnetized HED plasmas
20' |

Tuesday 23.10.18

Session 6 11:30-13:00 *Opacity I*

Chairperson: M. Fajardo

D. Hoarty A burnthrough experiment to measure iron opacity at conditions close to the solar radiative zone/convection zone boundary

30'

R. Shepherd Line transfer effects on inferring plasma conditions in buried layer experiments

30'

T. Gomez An Effort to Reconcile Electron-Broadening Theories

30'

Wednesday 24.10.18

Session 7 9:00-11:00 *Opacity II*

Chairperson: S. Pikuz

W. Johnson Opacity of Shock-Heated Plasmas
30'

T. Nagayama Systematic measurements of opacity dependence on temperature, density, and atomic number at stellar interior conditions
30'

A. Neukirch Atomic data for low temperature mid-Z elements for lithography applications
20'

J. -C. Pain Uncertainties in opacity measurements
20'

J. Rosato Questioning the validity of the radiative transfer equation in regimes of strongly coherent radiation
20'

Special Session 11:30-13:00

Thursday 25.10.18

Session 8 9:00-11:00 *XFELs – developments & applications I*

Chairperson: J. Wark

- H. Yoneda Bragg diffraction type hard x-ray laser pumped with intense XFEL pulses
30'
- M. Yurkov Potential of the European XFEL for generating radiation with TW-level peak
power and Joule-level pulse energy#
30'
- S. Glenzer Resolving the ongoing controversy about the conductivity of warm dense
Aluminum
30'
- F. Rosmej First observation of resonance pumping in seeded mode of X-ray line profiles of
highly charged ions in dense plasmas at LCLS
30'

Thursday 25.10.18

Session 9 11:30-13:10 XFELs – developments & applications II

Chairperson: T. Tschentscher

R. Santra Molecular imaging and plasma formation
30'

H. J. Lee A spectroscopic study of keV solid-density Fe plasma isochorically heated by
LCLS X-ray FEL
30'

N. Medvedev Solids underway to warm dense matter state
30'

Friday 26.10.18

Session 10 9:00-11:00 *ICF and High -Intensity-Laser Related Experiments*

Chairperson: S. Bastiani-Ceccotti

M. Macdonald

Diagnosing the hot-spot electron temperature from x-ray continuum emission measurements on NIF and OMEGA implosions

30'

M. Poirier Extreme-UV absorption processes in a laser-produced mid-Z plasma : measurements and theoretical interpretation

30'

E. Marley The Study of M-shell Gold Ionization in NLTE Plasmas Using a Buried Layer Platform at the OMEGA Laser

30'

D. Mariscal Proton Isochoric Heating and Warm Dense Matter Studies in the Multi-ps, kJ-class Laser Regime

30'

Friday 26.10.18

Session 11 11:30-13:10 *ICF - simulations*

Chairperson: R. Cauble

H. Scott Using Tabulated Non-LTE Data for Hohlraum Simulations
30'

P. Hatfield Machine learning and algorithmic methods in Plasma Physics
30'

D. B. Thorn Mass-temperature distributions within ICF implosions on the
National Ignition Facility
20'

Y. Frank Analysis of the hydrodynamic conditions in non-LTE buried layers experiments
using 1 & 2 D simulations
20'

Workshop Adjourns

Posters:

1

D. Benredjem Plasma potential and opacity calculations

2

T. Doeppner X-ray Scattering Measurements from 30-fold Compressed, Near-Degenerate
Plasmas at the National Ignition Facility

3

S. Frydrych Species separation in warm dense matter

4

C. Gao Ultrafast electron dynamics in a solid-density aluminium interacting with an
ultra-intense ultrafast x-ray pulse

5

V. Golovkina Efficient Modelling of K-shell Emission for Short-Pulse Laser Experiments in
SPECT3D

6

M. Jullien Neon photo-ionized plasma at LULI

7

G. Kang Femtosecond measurement of d electron dynamics in non-equilibrium warm
dense copper using XFEL

8

D. Kim EUV-source modeling using radiation-hydrodynamics method with RALEF-2D
code

9

M. Kruse Two-photon absorption cross section calculations related to the Iron opacity
Sandia Z-experiment

10

Y. Kurzweil Surrogate Experiments for Evaluating the Opacity Model accuracy in the Deep
Solar Interior Using the Micro-Equivalence Principle

11

R. Mancini Stark-broadened line shapes of Ar K-shell ions: a comparison between molecular dynamics simulations and MERL results

12

A. Morana X and XUV spectroscopy of ps laser-produced Al and C plasmas

13

K. McLean Corrections to 3T Modelling of radiation-matter energy exchange

14

C. Min Sang Ultrafast Dynamics of Excited Electron Distribution in Warm Dense Aluminum

15

Z. Moldabekov Effect of the dynamical electron collision frequency on the quantum wakefield around an ion in dense plasmas

16

J. -C. Pain Theory of opacity from two-photon absorption processes

17

G. Perez-Callejo The use of geometric effects in diagnosing ion density in ICF related Dot Spectroscopy experiments

18

R. Piron Average atom model calculations of dense plasma properties relevant to white dwarf stars

19

J. Rosato Stark-Zeeman line shape models for the diagnostic of magnetic fusion plasmas