

Physics of Non-ideal Plasmas

18

Report of Contributions

Contribution ID: 1

Type: **not specified**

Leveraging machine learning for exoplanet interior modeling and characterization (INVITED)

Wednesday, 18 September 2024 16:00 (30 minutes)

Presenter: BAUMEISTER, Philipp

Session Classification: Kinetic Theory and Other Topics

Track Classification: WDM Simulations

Contribution ID: 2

Type: **not specified**

Insights on the electronic structure of high-density beryllium from ab initio simulations (INVITED)

Monday, 16 September 2024 11:00 (30 minutes)

Presenter: BETHKENHAGEN, Mandy

Session Classification: WDM Simulations (I)

Track Classification: WDM Simulations

Contribution ID: 3

Type: **not specified**

Quantum Monte Carlo and Machine Learning methods applied to dense hydrogen (INVITED)

Tuesday, 17 September 2024 10:50 (30 minutes)

Presenter: CEPERLEY, David

Session Classification: Plasma Astrophysics

Track Classification: WDM Simulations

Contribution ID: 4

Type: **not specified**

Ab initio path integral Monte Carlo simulation of warm dense matter (INVITED)

Wednesday, 18 September 2024 10:50 (30 minutes)

Presenter: DORNHEIM, Tobias

Session Classification: Laser Plasma Interactions

Track Classification: Kinetic & Statistical Plasma Physics Theory

Contribution ID: 5

Type: **not specified**

Developments in X-Ray Thomson Scattering and dense plasma studies using X-ray Free Electron Lasers and the National Ignition Facility (INVITED)

Monday, 16 September 2024 13:40 (30 minutes)

Presenter: FLETCHER, Luke

Session Classification: WDM Experiments (I)

Track Classification: WDM Experiments

Contribution ID: 6

Type: **not specified**

TBD (INVITED)

Tuesday, 17 September 2024 08:30 (30 minutes)

Presenter: KONONOV, Alina

Session Classification: WDM Simulations (II)

Track Classification: WDM Simulations

Contribution ID: 7

Type: **not specified**

Progress and outlook of the inertial confinement fusion program at the National Ignition Facility (INVITED)

Monday, 16 September 2024 09:00 (30 minutes)

Presenter: PAK, Arthur

Session Classification: ICF and Fusion Energy

Track Classification: ICF & Fusion Energy

Contribution ID: 8

Type: **not specified**

Adiabatic connections for exact and approximate thermal density functional theory (INVITED)

Tuesday, 17 September 2024 09:00 (30 minutes)

Presenter: PRIBRAM-JONES, Aurora

Session Classification: WDM Simulations (II)

Track Classification: WDM Simulations

Contribution ID: 9

Type: **not specified**

Scaling laws of pairs showers and avalanches driven by lasers (INVITED)

Monday, 16 September 2024 16:00 (30 minutes)

Presenter: RICONDA, Caterina

Session Classification: Kinetic Theory (I)

Track Classification: Laser-plasma interactions

Contribution ID: **10**

Type: **not specified**

TBD (INVITED)

Tuesday, 17 September 2024 13:40 (30 minutes)

Presenter: ROHRINGER, Nina

Session Classification: WDM Experiments (II)

Track Classification: WDM Experiments

Contribution ID: 11

Type: **not specified**

Free Energy Density Functional Theory for Matter under Extreme Conditions (INVITED)

Thursday, 19 September 2024 08:40 (30 minutes)

Presenter: TRICKEY, Samuel

Session Classification: Kinetic Theory (II)

Track Classification: Kinetic & Statistical Plasma Physics Theory

Contribution ID: 12

Type: **not specified**

Measuring shear viscosity at the macroscale (INVITED)

Monday, 16 September 2024 14:10 (30 minutes)

Presenter: SHANG, Jessica

Session Classification: WDM Experiments (I)

Track Classification: WDM Experiments

Contribution ID: 13

Type: **not specified**

UK Programme of Laser Inertial Fusion Technology for energy (UPLiFT): Our Approach and Rationale (INVITED)

Monday, 16 September 2024 09:30 (30 minutes)

Presenter: SCOTT, Robbie

Session Classification: ICF and Fusion Energy

Track Classification: ICF & Fusion Energy

Contribution ID: 14

Type: **not specified**

Calculating and diagnosing relaxation in warm dense matter (INVITED)

Monday, 16 September 2024 11:30 (30 minutes)

Presenter: VORBERGER, Jan

Session Classification: WDM Simulations (I)

Track Classification: WDM Simulations

Contribution ID: 15

Type: **not specified**

Time-Dependent Density Functional Theory towards coupled electron-ion transport in Non-Ideal Plasmas (INVITED)

Wednesday, 18 September 2024 08:40 (30 minutes)

Presenter: WHITE, Alexander

Session Classification: WDM Simulations (III)

Track Classification: WDM Simulations

Contribution ID: 16

Type: **not specified**

Measurement of interfacial thermal resistance in high-energy-density matter (INVITED)

Tuesday, 17 September 2024 14:30 (30 minutes)

Presenter: WHITE, Thomas

Session Classification: WDM Experiments (II)

Track Classification: WDM Experiments

Contribution ID: 17

Type: **not specified**

Thermal exchange-correlation effects in density functional theory of warm dense matter

Wednesday, 18 September 2024 09:50 (20 minutes)

Presenter: MOLDABEKOV, Zhandos

Session Classification: WDM Simulations (III)

Contribution ID: 18

Type: **not specified**

Account of e – e Collisions in DFT-MD Simulations of Electrical Conductivity Calculations for Warm Dense Matter

Monday, 16 September 2024 12:20 (20 minutes)

Presenter: RÖPKE, Gert

Session Classification: WDM Simulations (I)

Contribution ID: 19

Type: **not specified**

Collective x-ray Thomson scattering for conditions inside red dwarf stars using the National Ignition Facility

Monday, 16 September 2024 10:00 (20 minutes)

Presenter: REDMER, Ronald

Session Classification: ICF and Fusion Energy

Contribution ID: 20

Type: **not specified**

Investigating the liquid-liquid, insulator-to-metal transition in hydrogen and deuterium

Wednesday, 18 September 2024 15:20 (20 minutes)

Presenter: KNUDSON, Marcus

Session Classification: WDM Experiments (III)

Contribution ID: 21

Type: **not specified**

Temperature and Structure Measurements of Heavy-Ion-Heated Diamond using in Situ X-Ray Diagnostics

Monday, 16 September 2024 14:40 (20 minutes)

Presenter: LÜTGERT, Julian

Session Classification: WDM Experiments (I)

Contribution ID: 22

Type: **not specified**

Ultrahigh Resolution X-ray Thomson Scattering Measurements at the European XFEL

Monday, 16 September 2024 15:00 (20 minutes)

Presenter: GAWNE, Thomas

Session Classification: WDM Experiments (I)

Contribution ID: 23

Type: **not specified**

Formation and release dynamics of Nanodiamonds produced in laser-driven shocks

Monday, 16 September 2024 15:20 (20 minutes)

Presenter: HEUSER, Ben

Session Classification: WDM Experiments (I)

Contribution ID: 24

Type: **not specified**

Quantum kinetic simulations of nonequilibrium electrons: the G1-G2 scheme

Monday, 16 September 2024 16:30 (20 minutes)

Presenter: BONITZ, Michael

Session Classification: Kinetic Theory (I)

Contribution ID: 25

Type: **not specified**

Progress in the self-consistent dielectric formalism for the uniform electron fluid

Thursday, 19 September 2024 09:50 (20 minutes)

Presenter: TOLIAS, Panagiotis

Session Classification: Kinetic Theory (II)

Contribution ID: 26

Type: **not specified**

Structural rearrangement in warm dense water revealed by XFEL X-ray pump X-ray probe experiment

Monday, 16 September 2024 17:10 (20 minutes)

Presenter: ZIAJA-MOTYKA, Beata

Session Classification: Kinetic Theory (I)

Contribution ID: 27

Type: **not specified**

An ab initio study of the hydrogen-helium phase separation in the Gibbs ensemble

Tuesday, 17 September 2024 09:30 (20 minutes)

Presenter: SOUBIRAN, François

Session Classification: WDM Simulations (II)

Contribution ID: 28

Type: **not specified**

Modelling of warm dense hydrogen via explicit real time electron dynamics: Dynamic structure factors and transport coefficients

Monday, 16 September 2024 10:20 (20 minutes)

Presenter: SVENSSON, Pontus

Session Classification: ICF and Fusion Energy

Contribution ID: 29

Type: **not specified**

First-principles molecular dynamics equation of state of liquid to dense plasma iron

Thursday, 19 September 2024 10:10 (20 minutes)

Presenter: BLANCHET, Augustin

Session Classification: Kinetic Theory (II)

Contribution ID: 30

Type: **not specified**

Production of diamonds at the Facility for Antiprotons and Ion Research using intense heavy ion beams

Tuesday, 17 September 2024 11:20 (20 minutes)

Presenter: TAHIR, Naeem

Session Classification: Plasma Astrophysics

Contribution ID: 31

Type: **not specified**

Demonstration of highly efficient p+ beam energy deposition into meteorite material and its material properties under high-energy irradiation at CERN HiRadMat facility

Tuesday, 17 September 2024 11:40 (20 minutes)

Presenter: BOCHMANN, Melanie

Session Classification: Plasma Astrophysics

Contribution ID: 32

Type: **not specified**

Warm dense matter composition within the framework of the generalized chemical model of a multicomponent plasma medium

Tuesday, 17 September 2024 12:00 (20 minutes)

Presenter: DAVLETOV, Askar

Session Classification: Plasma Astrophysics

Contribution ID: 33

Type: **not specified**

Non-ideal effects on ionization potential depression and ionization balance of dense Al and Au plasmas

Tuesday, 17 September 2024 12:20 (20 minutes)

Presenter: ZENG, Jiaolong

Session Classification: Plasma Astrophysics

Contribution ID: 34

Type: **not specified**

Direct Measurements of Bond Hardening in Highly Non-Equilibrium Gold

Tuesday, 17 September 2024 15:00 (20 minutes)

Presenter: GRIFFIN, Travis

Session Classification: WDM Experiments (II)

Contribution ID: 35

Type: **not specified**

Dynamics of femtosecond laser-heated warm dense metals with time-resolved x-ray absorption

Thursday, 19 September 2024 11:10 (20 minutes)

Presenter: LECHERBOURG, Ludovic

Session Classification: Warm Dense Matter (IV)

Contribution ID: 36

Type: **not specified**

Towards diffusivity measurements in laser shocked material with X-Ray Photon Correlation Spectroscopy

Thursday, 19 September 2024 10:50 (20 minutes)

Presenter: HEATON, Charles

Session Classification: Warm Dense Matter (IV)

Contribution ID: 37

Type: **not specified**

Dynamical and transport properties of two-dimensional Yukawa system taking into account the finite particle size

Thursday, 19 September 2024 09:30 (20 minutes)

Presenter: BASTYKOVA, Nuriya

Session Classification: Kinetic Theory (II)

Contribution ID: 38

Type: **not specified**

Resolving the re-binding of valence states in isochorically heated zinc via resonant inelastic x-ray scattering

Wednesday, 18 September 2024 09:10 (20 minutes)

Presenter: HUMPHRIES, Oliver

Session Classification: WDM Simulations (III)

Contribution ID: 39

Type: **not specified**

A pulsed power facility for studying the warm dense matter regime

Wednesday, 18 September 2024 14:40 (20 minutes)

Presenter: JODAR, Benjamin

Session Classification: WDM Experiments (III)

Contribution ID: 40

Type: **not specified**

Dynamic local field correction of the one-component plasma

Wednesday, 18 September 2024 09:30 (20 minutes)

Presenter: KÄHLERT, Hanno

Session Classification: WDM Simulations (III)

Contribution ID: 41

Type: **not specified**

Non-Markovian effects in the stopping power of electron projectiles in dense plasmas

Monday, 16 September 2024 12:00 (20 minutes)

Presenter: MAKAIT, Christopher

Session Classification: WDM Simulations (I)

Contribution ID: 42

Type: **not specified**

Ionization dynamics in ultra-relativistic plasmas

Wednesday, 18 September 2024 11:20 (20 minutes)

Presenter: ZASTRAU, Ulf

Session Classification: Laser Plasma Interactions

Contribution ID: 43

Type: **not specified**

Ionisation Calculations using Classical Molecular Dynamics

Wednesday, 18 September 2024 11:40 (20 minutes)

Presenter: PLUMMER, Daniel

Session Classification: Laser Plasma Interactions

Contribution ID: 44

Type: **not specified**

Progress in the atomic modelling of dense plasmas

Wednesday, 18 September 2024 12:00 (20 minutes)

Presenter: PIRON, Robin

Session Classification: Laser Plasma Interactions

Contribution ID: 45

Type: **not specified**

Understanding the ionization balance of hot and dense Be plasmas

Wednesday, 18 September 2024 12:20 (20 minutes)

Presenter: YUAN, Jianmin

Session Classification: Laser Plasma Interactions

Contribution ID: 46

Type: **not specified**

Direct measurement of temperature and Electron-Ion Equilibration Rates in Warm Dense Gold

Wednesday, 18 September 2024 15:00 (20 minutes)

Presenter: NAGLER, Bob

Session Classification: WDM Experiments (III)

Contribution ID: 47

Type: **not specified**

Numerical Modelling of a Pulsed Power Facility for the Study of Warm Dense Matter Regime

Wednesday, 18 September 2024 16:30 (20 minutes)

Presenter: REVELLO, Luc

Session Classification: Kinetic Theory and Other Topics

Contribution ID: 48

Type: **not specified**

First Measurement of the Free-Free Absorption of Hydrogen at Stellar Interior Conditions

Wednesday, 18 September 2024 16:50 (20 minutes)

Presenter: SCHUMACHER, Samuel

Session Classification: Kinetic Theory and Other Topics

Contribution ID: 49

Type: **not specified**

A general approach to the determination of static and dynamic properties of non-ideal fermionic liquids and partially ionized plasmas

Monday, 16 September 2024 16:50 (20 minutes)

Presenter: TKACHENKO, Igor

Session Classification: Kinetic Theory (I)

Contribution ID: 50

Type: **not specified**

Characterising C-H demixing and Hydrogen metallisation in Warm Dense Matter conditions

Tuesday, 17 September 2024 15:20 (20 minutes)

Presenter: RANJAN, Divyanshu

Session Classification: WDM Experiments (II)

Contribution ID: 51

Type: **not specified**

Transport Properties in WDM Shock-Bubble Experiments

Wednesday, 18 September 2024 17:10 (20 minutes)

Presenter: KURZER-OGUL, Kelin

Session Classification: Kinetic Theory and Other Topics

Contribution ID: 52

Type: **not specified**

Finite-temperature generalized Kohn-Sham and the generalized thermal adiabatic connection

Thursday, 19 September 2024 09:10 (20 minutes)

Presenter: HARDING, Brittany

Session Classification: Kinetic Theory (II)

Contribution ID: 53

Type: **not specified**

Ab initio simulations for hydrogen-water mixtures

Tuesday, 17 September 2024 09:50 (20 minutes)

Presenter: BERGERMANN, Armin

Session Classification: WDM Simulations (II)

Contribution ID: 54

Type: **not specified**

Improved Conductivity model for fully and partially ionized hydrogen plasma

Wednesday, 18 September 2024 10:10 (20 minutes)

Presenter: KLEINSCHMIDT, Uwe

Session Classification: WDM Simulations (III)

Contribution ID: 55

Type: **not specified**

Average-atom resistivity calculations for expanded metallic plasmas: Which electrons are really conduction ones?

Tuesday, 17 September 2024 10:10 (20 minutes)

Presenter: PAIN, Jean-Christophe

Session Classification: WDM Simulations (II)

Contribution ID: 56

Type: **not specified**

TBD

Tuesday, 17 September 2024 14:10 (20 minutes)

Presenter: COLLINS, Gilbert

Session Classification: WDM Experiments (II)