

60th Karpacz Winter School on Theoretical Physics & WE-Heraeus Physics School



Report of Contributions

Contribution ID: 1

Type: **not specified**

Phase Transitions in Neutron Stars - Lecture 1

Wednesday 22 May 2024 12:00 (1h 15m)

Presenter: Dr BURGIO, Fiorella

Session Classification: Lectures

Contribution ID: 2

Type: **not specified**

Phase Transitions in Neutron Stars - Lecture 2

Thursday 23 May 2024 09:00 (1h 15m)

Presenter: Dr BURGIO, Fiorella

Session Classification: Lectures

Contribution ID: 3

Type: **not specified**

Colloquium Lecture "The fate of the Universe - New Results from JWST and outlook"

Thursday 16 May 2024 17:00 (1h 15m)

Presenter: Prof. HASINGER, Günther (DZA, Gorlitz)

Session Classification: Lectures

Contribution ID: 4

Type: **not specified**

Is Dark Matter made up of Primordial Black Holes? An update

Friday 17 May 2024 09:00 (1h 15m)

Presenter: Prof. HASINGER, Günther (DZA, Gorlitz)

Session Classification: Lectures

Contribution ID: 5

Type: **not specified**

Critical Point and Dynamics of a Phase Transition in Heavy Ion Collisions - Lecture 1

Friday 17 May 2024 12:00 (1h 15m)

Presenter: Prof. KAPUSTA, Joseph

Session Classification: Lectures

Contribution ID: 6

Type: **not specified**

Critical Point and Dynamics of a Phase Transition in Heavy Ion Collisions - Lecture 2

Saturday 18 May 2024 12:00 (1h 15m)

Presenter: Prof. KAPUSTA, Joseph

Session Classification: Lectures

Contribution ID: 7

Type: **not specified**

Critical Point and Dynamics of a Phase Transition in Heavy Ion Collisions - Lecture 3

Sunday 19 May 2024 09:00 (1h 15m)

Presenter: Prof. KAPUSTA, Joseph

Session Classification: Lectures

Contribution ID: 8

Type: **not specified**

Quark Deconfinement in Supernova Explosions: How to probe it? - Lecture 1

Thursday 23 May 2024 15:00 (1h 15m)

Presenter: Dr KURODA, Takami (Max-Planck-Institut für Gravitationsphysik, Potsdam)

Session Classification: Lectures

Contribution ID: 9

Type: **not specified**

Quark Deconfinement in Supernova Explosions: How to probe it? - Lecture 2

Friday 24 May 2024 09:00 (1h 15m)

Presenter: Dr KURODA, Takami (Max-Planck-Institut für Gravitationsphysik, Potsdam)

Session Classification: Lectures

Contribution ID: **10**

Type: **not specified**

Warm Dense Plasmas from Inertial Fusion to Planetary Interiors - Lecture 1

Friday 17 May 2024 15:00 (1h 15m)

Presenter: Prof. MILITZER, Burkhard (UC Berkeley)

Session Classification: Lectures

Contribution ID: 11

Type: **not specified**

Warm Dense Plasmas from Inertial Fusion to Planetary Interiors - Lecture 2

Saturday 18 May 2024 15:00 (1h 15m)

Presenter: Prof. MILITZER, Burkhard (UC Berkeley)

Session Classification: Lectures

Contribution ID: 12

Type: **not specified**

Warm Dense Plasmas from Inertial Fusion to Planetary Interiors - Lecture 3

Sunday 19 May 2024 15:00 (1h 15m)

Presenter: Prof. MILITZER, Burkhard (UC Berkeley)

Session Classification: Lectures

Contribution ID: 13

Type: **not specified**

Topological Phases of Matter in and out of Equilibrium - Lecture 1

Saturday 18 May 2024 10:15 (1h 15m)

Presenter: Prof. MOESSNER, Roderich (Max Planck Institute for the Physics of Complex Systems, Dresden)

Session Classification: Lectures

Contribution ID: 14

Type: **not specified**

Topological Phases of Matter in and out of Equilibrium - Lecture 2

Tuesday 21 May 2024 09:00 (1h 15m)

Presenter: Prof. MOESSNER, Roderich (Max Planck Institute for the Physics of Complex Systems, Dresden)

Session Classification: Lectures

Contribution ID: 15

Type: **not specified**

The Complexity of Neutron Star Matter: from the Liquid-Gas Phase Transition to Chiral Symmetry Breaking and Restoration - Lecture 1

Wednesday 22 May 2024 09:00 (1h 15m)

Presenter: Prof. PROVIDENCIA, Constanca (University of Coimbra)

Session Classification: Lectures

Contribution ID: 16

Type: **not specified**

The Complexity of Neutron Star Matter: from the Liquid-Gas Phase Transition to Chiral Symmetry Breaking and Restoration - Lecture 2

Thursday 23 May 2024 12:00 (1h 15m)

Presenter: Prof. PROVIDENCIA, Constanca (University of Coimbra)

Session Classification: Lectures

Contribution ID: 17

Type: **not specified**

The Universality of Critical Behaviour - Lecture 1

Friday 17 May 2024 10:15 (1h 15m)

Presenter: Prof. SATZ, Helmut (University of Bielefeld)

Session Classification: Lectures

Contribution ID: **18**

Type: **not specified**

The Universality of Critical Behaviour - Lecture 2

Saturday 18 May 2024 09:00 (1h 15m)

Presenter: Prof. SATZ, Helmut (University of Bielefeld)

Session Classification: Lectures

Contribution ID: **19**

Type: **not specified**

Correlations, Cluster Formation and Phase Transitions in Dense Fermion Systems - Lecture 1

Sunday 19 May 2024 12:00 (1h 15m)

Presenter: Prof. RÖPKE, Gerd (Universitaet Rostock)

Session Classification: Lectures

Contribution ID: 20

Type: **not specified**

Correlations, Cluster Formation and Phase Transitions in Dense Fermion Systems - Lecture 2

Tuesday 21 May 2024 12:00 (1h 15m)

Presenter: Prof. RÖPKE, Gerd (Universitaet Rostock)

Session Classification: Lectures

Contribution ID: 21

Type: **not specified**

Correlations, Cluster Formation and Phase Transitions in Dense Fermion Systems - Lecture 3

Friday 24 May 2024 12:00 (1h 15m)

Presenter: Prof. RÖPKE, Gerd (Universitaet Rostock)

Session Classification: Lectures

Contribution ID: 22

Type: **not specified**

Phase Transitions in Neutron Stars - Tutorial

Thursday 23 May 2024 10:15 (1h 15m)

Presenter: Dr BURGIO, Fiorella

Session Classification: Tutorials

Contribution ID: 23

Type: **not specified**

Critical Point and Dynamics of a Phase Transition in Heavy Ion Collisions - Tutorial

Sunday 19 May 2024 10:15 (1h 15m)

Presenter: Prof. KAPUSTA, Joseph

Session Classification: Tutorials

Contribution ID: 25

Type: **not specified**

Quark Deconfinement in Supernova Explosions: How to probe it? - Tutorial

Friday 24 May 2024 10:15 (1h 15m)

Presenter: Dr KURODA, Takami (Max-Planck-Institut für Gravitationsphysik, Potsdam)

Session Classification: Tutorials

Contribution ID: 26

Type: **not specified**

Warm Dense Plasmas from Inertial Fusion to Planetary Interiors - Tutorial 1

Saturday 18 May 2024 16:15 (1h 15m)

Presenter: Prof. MILITZER, Burkhard (UC Berkeley)

Session Classification: Tutorials

Contribution ID: 27

Type: **not specified**

Warm Dense Plasmas from Inertial Fusion to Planetary Interiors - Tutorial 2

Sunday 19 May 2024 16:15 (1h 15m)

Presenter: Prof. MILITZER, Burkhard (UC Berkeley)

Session Classification: Tutorials

Contribution ID: 28

Type: **not specified**

Topological Phases of Matter in and out of Equilibrium - Tutorial

Tuesday 21 May 2024 10:15 (1h 15m)

Presenter: Prof. MOESSNER, Roderich (Max Planck Institute for the Physics of Complex Systems, Dresden)

Session Classification: Tutorials

Contribution ID: 29

Type: **not specified**

The Complexity of Neutron Star Matter: from the Liquid-Gas Phase Transition to Chiral Symmetry Breaking and Restoration - Tutorial

Wednesday 22 May 2024 10:15 (1h 15m)

Presenter: Prof. PROVIDENCIA, Constanca (University of Coimbra)

Session Classification: Tutorials

Contribution ID: 30

Type: **not specified**

Correlations, Cluster Formation and Phase Transitions in Dense Fermion Systems - Tutorial 1

Tuesday 21 May 2024 15:00 (1h 15m)

Presenter: Prof. RÖPKE, Gerd (Universitaet Rostock)

Session Classification: Tutorials

Contribution ID: 31

Type: **not specified**

Correlations, Cluster Formation and Phase Transitions in Dense Fermion Systems - Tutorial 2

Friday 24 May 2024 15:00 (1h 15m)

Presenter: Prof. RÖPKE, Gerd (Universitaet Rostock)

Session Classification: Tutorials

Contribution ID: **32**

Type: **not specified**

Welcome

Thursday 16 May 2024 15:00 (5 minutes)

Presenter: Prof. BLASCHKE, David (University of Wrocław)

Session Classification: Opening

Contribution ID: 33

Type: **not specified**

Opening

Thursday 16 May 2024 15:05 (15 minutes)

Presenter: Prof. FRYDRYSZAK, Andrzej (University of Wroclaw)

Session Classification: Opening

Contribution ID: 34

Type: **not specified**

Historical Remarks on Karpacz Winter Schools

Thursday 16 May 2024 15:20 (50 minutes)

Presenters: Prof. PEKALSKI, Andrzej; Prof. LUKIERSKI, Jerzy (University of Wrocław); Prof. TURKO, Ludwik (University of Wrocław); Prof. GARBACZEWSKI, Piotr; Prof. KARWOWSKI, Witold

Session Classification: Opening

Contribution ID: 35

Type: **not specified**

Free Contributions

Thursday 16 May 2024 16:10 (20 minutes)

Session Classification: Opening

Contribution ID: **36**

Type: **not specified**

Publishing with PRC

Thursday 23 May 2024 18:00 (40 minutes)

Presenter: Prof. KAPUSTA, Joseph

Session Classification: WE-Heraeus Foundation & Scientific Publishing

Contribution ID: 37

Type: **not specified**

The Wilhelm and Else Heraeus Foundation

Thursday 23 May 2024 18:50 (35 minutes)

Presenter: Prof. BLASCHKE, David

Session Classification: WE-Heraeus Foundation & Scientific Publishing

Contribution ID: **38**

Type: **not specified**

Award ceremony for best poster and best talk prizes & Closing speech

Friday 24 May 2024 16:15 (1h 15m)

Presenter: Prof. BLASCHKE, David

Session Classification: Closing

Contribution ID: 39

Type: **not specified**

Non-Hermitian control of Hermitian waveguide arrays

Saturday 18 May 2024 18:00 (15 minutes)

Presenter: RIZOS, Spyros (National Technical University of Athens)

Session Classification: Short Presentations

Contribution ID: 40

Type: **not specified**

Violation of Bell Inequalities on Quantum Computers

Saturday 18 May 2024 18:15 (15 minutes)

Presenter: ŚLIWIŃSKI, Michał (Warsaw University of Technology)

Session Classification: Short Presentations

Contribution ID: 41

Type: **not specified**

Vacuum stresses and energy fluxes induced by a cosmic string in de Sitter spacetime

Saturday 18 May 2024 18:30 (15 minutes)

Presenter: KOTANJYAN, Vardazar

Session Classification: Short Presentations

Contribution ID: 42

Type: **not specified**

The footprint of nuclear saturation properties on the neutron star f mode oscillation frequencies: a machine learning approach

Saturday 18 May 2024 18:45 (15 minutes)

Presenter: Dr KUMAR, Deepak (Indian Institute of Science Education and Research)

Session Classification: Short Presentations

Contribution ID: 43

Type: **not specified**

Spectral properties of non-Abelian gauge theories both in and out-of-thermal equilibrium

Saturday 18 May 2024 19:00 (15 minutes)

Presenter: SHANKER, Ravi (The Institute of Mathematical Sciences)

Session Classification: Short Presentations

Contribution ID: 44

Type: **not specified**

Probing the onset of deconfinement: Hadron production properties in the NA61/SHINE experiment at CERN SPS

Sunday 19 May 2024 18:00 (15 minutes)

Presenter: ZHEREBTSOVA, Elizaveta (University of Wroclaw)

Session Classification: Short Presentations

Contribution ID: 45

Type: **not specified**

Probing the shape of QGP droplet using high-pT tomography

Sunday 19 May 2024 18:15 (15 minutes)

Presenter: Dr KARMAKAR, Bithika (University of Wroclaw)

Session Classification: Short Presentations

Contribution ID: 46

Type: **not specified**

Heavy quark momentum broadening in a non-Abelian plasma off-equilibrium

Sunday 19 May 2024 18:30 (15 minutes)

Presenter: PANDEY, Harshit (The Institute of Mathematical Sciences)

Session Classification: Short Presentations

Contribution ID: 47

Type: **not specified**

General predictions of neutron star properties using unified relativistic mean-field equations of state

Sunday 19 May 2024 18:45 (15 minutes)

Presenter: SCURTO, Luigi (CFisUC, University of Coimbra)

Session Classification: Short Presentations

Contribution ID: 48

Type: **not specified**

Inclusion of bosonic dark matter in neutron star to satisfy the observable features induced by nuclear matter models

Thursday 23 May 2024 17:30 (15 minutes)

Presenter: RAFIEI KARKEVANDI, Davood (ICRANet-Isfahan, Isfahan University of Technology)

Session Classification: Short Presentations

Contribution ID: 49

Type: **not specified**

Nuclear pastas in neutron stars

Thursday 23 May 2024 16:15 (15 minutes)

Presenter: SHCHECHILIN, Nikolai (Universite Libre de Bruxelles)

Session Classification: Short Presentations

Contribution ID: 50

Type: **not specified**

The cooling processes and distribution of mass in neutron stars

Thursday 23 May 2024 16:30 (15 minutes)

Presenter: DAS, Harish Chandra (INFN Catania)

Session Classification: Short Presentations

Contribution ID: 51

Type: **not specified**

Effect of color superconductivity on QCD phase diagram

Sunday 19 May 2024 19:00 (15 minutes)

Presenter: SHUKLA, Udit (University of Wroclaw)

Session Classification: Short Presentations

Contribution ID: 52

Type: **not specified**

Hybrid star phenomenology from the properties of the special point

Thursday 23 May 2024 17:00 (15 minutes)

Presenter: GÄRTLEIN, Christoph (University of Lisbon)

Session Classification: Short Presentations

Contribution ID: 53

Type: **not specified**

Simulations of massive star explosions driven by a first-order QCD phase transition Neutrino signal and gravitational wave mode analysis

Thursday 23 May 2024 16:45 (15 minutes)

Presenter: Ms KHOSRAVI LARGANI, Noshad (University of Wroclaw)

Session Classification: Short Presentations

Contribution ID: 54

Type: **not specified**

Hybrid star phenomenology from the properties of the special point

Tuesday 21 May 2024 16:45 (45 minutes)

Primary author: GÄRTLEIN, Christoph (University of Lisbon)

Presenter: GÄRTLEIN, Christoph (University of Lisbon)

Session Classification: Poster Session

Contribution ID: 55

Type: **not specified**

The effect of late-time heating in hybrid millisecond pulsars

Tuesday 21 May 2024 16:45 (45 minutes)

Primary author: PANASIUK, Pavlo

Presenter: PANASIUK, Pavlo

Session Classification: Poster Session

Contribution ID: 56

Type: **not specified**

Hybrid Stars: Bayesian Approach with NJL

Tuesday 21 May 2024 16:45 (45 minutes)

Primary author: ALBINO, Milena (Universidade de Coimbra)

Presenter: ALBINO, Milena (Universidade de Coimbra)

Session Classification: Poster Session

Contribution ID: 57

Type: **not specified**

Particle production in strong fields and Berry's phase

Tuesday 21 May 2024 16:45 (45 minutes)

Primary author: ASATRYAN, Levon (Yerevan State University)

Presenter: ASATRYAN, Levon (Yerevan State University)

Session Classification: Poster Session

Contribution ID: 58

Type: **not specified**

Bayesian analysis of the dense matter equation of state

Tuesday 21 May 2024 16:45 (45 minutes)

Primary author: Dr AYRIYAN, Alexander (University of Wroclaw)

Presenter: Dr AYRIYAN, Alexander (University of Wroclaw)

Session Classification: Poster Session

Contribution ID: 59

Type: **not specified**

Do Neutron Stars give us Nuclear Matter properties? Machine Learning answers

Tuesday 21 May 2024 16:45 (45 minutes)

Primary author: CARVALHO, Valéria (Universidade de Coimbra)

Presenter: CARVALHO, Valéria (Universidade de Coimbra)

Session Classification: Poster Session

Contribution ID: **60**

Type: **not specified**

Light Nuclei in hot stellar matter: calibrating their nuclear couplings using heavy-ion collisions data

Tuesday 21 May 2024 18:00 (45 minutes)

Presenter: CUSTÓDIO, Tiago (University of Coimbra)

Session Classification: Poster Session

Contribution ID: **61**

Type: **not specified**

Hybrid star phenomenology from the properties of the special point

Presenter: GÄRTLEIN, Christoph (University of Lisbon)

Session Classification: Poster Session

Contribution ID: **62**

Type: **not specified**

Violation of Bell Inequalities on Quantum Computers

Tuesday 21 May 2024 18:00 (45 minutes)

Presenter: ŚLIWIŃSKI, Michał (Warsaw University of Technology)

Session Classification: Poster Session

Contribution ID: 63

Type: **not specified**

Exploring Neutron Stars' Potential to Constrain the Mass of Bosonic Dark Matter

Tuesday 21 May 2024 18:00 (45 minutes)

Presenter: SHAHRBAF MOTLAGH, Mahboubeh (University of Wroclaw)

Session Classification: Poster Session

Contribution ID: **64**

Type: **not specified**

Zubarev Meets Bayes: Non-Equilibrium Pion Distribution Function in Heavy-Ion Collisions

Tuesday 21 May 2024 18:00 (45 minutes)

Presenter: Mr VITIUK, Oleksandr (University of Wroclaw)

Session Classification: Poster Session

Contribution ID: 65

Type: **not specified**

Graphene motivated generalised 2+1D Gross-Neveu model

Tuesday 21 May 2024 18:00 (45 minutes)

Presenter: Mr MAHATO, Biplab (University of Wrocław)

Session Classification: Poster Session

Contribution ID: 66

Type: **not specified**

After Dinner Talk "Introduction to the movie 'Oppenheimer'"

Wednesday 22 May 2024 21:00 (45 minutes)

Presenter: Prof. KAPUSTA, Joseph

Contribution ID: 67

Type: **not specified**

Excursion program

Contribution ID: **68**

Type: **not specified**

Excursion Program

Monday 20 May 2024 09:00 (30 minutes)

Primary author: IVANYTSKYI, Oleksii

Presenter: IVANYTSKYI, Oleksii

Contribution ID: **69**

Type: **not specified**

Journal of Subatomic Particles and Cosmology

Thursday 23 May 2024 18:40 (10 minutes)

Presenter: Prof. SASAKI, Chihiro

Session Classification: WE-Heraeus Foundation & Scientific Publishing

Contribution ID: 70

Type: **not specified**

Superfluid fraction in the inner crust of neutron stars

Thursday 23 May 2024 17:15 (15 minutes)

Presenter: ALMIRANTE, Giorgio

Session Classification: Short Presentations

Contribution ID: 71

Type: **not specified**

Poster Flash talks

Tuesday 21 May 2024 16:15 (30 minutes)

Contribution ID: 72

Type: **not specified**

Electrical conductivity of warm neutron star crust in magnetic fields: Neutron-drip regime

Tuesday 21 May 2024 18:00 (45 minutes)

Presenter: GEVORGYAN, Narine

Session Classification: Poster Session

Contribution ID: 73

Type: **not specified**

Infinite nuclear matterwithin the relativistic Hartree-Fock approximation

Tuesday 21 May 2024 18:00 (45 minutes)

Presenter: Mr SOKOŁOWSKI, Kamil (University of Wrocław)

Session Classification: Poster Session