

MMCP2024

MATHEMATICAL MODELING AND COMPUTATIONAL PHYSICS 2024



Report of Contributions

Contribution ID: 1

Type: **not specified**

YSU Scientific Program

Monday 21 October 2024 10:05 (35 minutes)

Presenter: BARKHUDARYAN, Rafayel (Yerevan State University)

Session Classification: Plenary Session

Contribution ID: 2

Type: **not specified**

Methods and technologies of data processing in heterogeneous computing environments

Monday 21 October 2024 11:05 (35 minutes)

Presenter: KORENKOV, Vladimir (JINR)

Session Classification: Plenary Session

Contribution ID: 3

Type: **not specified**

Armenian National Supercomputing Center: Bridging Science and Technology through High-Performance Computing

Monday 21 October 2024 12:15 (35 minutes)

Presenter: MIRZOYAN, Artashes (Institute for Informatics and Automation Problems of NAS RA)

Session Classification: Plenary Session

Contribution ID: 4

Type: **not specified**

Trusted Artificial Intelligence

Monday 21 October 2024 11:40 (35 minutes)

Presenter: AVETISYAN, Arutyun (ISP RAS)

Session Classification: Plenary Session

Contribution ID: 5

Type: **not specified**

Small-angle scattering and neutron reflectometry methods in the study of magnetic nanoparticles in magnetic fluids and their composites

Monday 21 October 2024 14:00 (15 minutes)

Presenter: KOPCANSKY, Peter (IEP SAS)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 6

Type: **not specified**

**Textile/ iron oxide nanozyme composites:
Preparation, SANS/SAXS characterization, modelling
of structural arrangements and environmental
technology applications**

Monday 21 October 2024 14:15 (15 minutes)

Presenter: SAFARIK, Ivo (IEP SAS)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 7

Type: **not specified**

Field Theoretic Renormalization Group Approach to a Problem of a Running Sandpile in Turbulent Environment

Monday 21 October 2024 14:30 (15 minutes)

Presenter: KAKIN, Polina

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 8

Type: **not specified**

Peculiarities of Buzdin and Chimera Steps in the IV-Curve of Superconductor Ferromagnetic φ_0 Josephson Junction

Monday 21 October 2024 14:45 (15 minutes)

Presenter: ABDEL GHANI, Majed (BLTP JINR)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 9

Type: **not specified**

Mathematical analysis of interactions in ferronematics.

Monday 21 October 2024 15:00 (15 minutes)

Presenter: TOMAŠOVIČOVÁ, Natália (IEP SAS)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 10

Type: **not specified**

Quantum field renormalization approach to magnetohydrodynamics: Analysis in Elsasser variables

Monday 21 October 2024 15:15 (15 minutes)

Presenter: MIZISIN, Lukas (BLTP JINR)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 11

Type: **not specified**

Turbulent Dynamo as Spontaneous Symmetry Breaking: α -effect

Monday 21 October 2024 16:00 (15 minutes)

Presenter: OVSIANNIKOV, Andrei (UPJS)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 12

Type: **not specified**

Dynamic isotropic percolation process: Three-loop approximation

Monday 21 October 2024 16:15 (15 minutes)

Presenter: KECER, Matej (UPJS)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 13

Type: **not specified**

Stochastic voter model driven by avalanche-like perturbations

Monday 21 October 2024 16:30 (15 minutes)

Presenter: SAVITSKAYA, Natalia (Kurchatov Institute (Konstantinov Institute))

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 14

Type: **not specified**

Random surface growth in random environment: renormalization group analysis of infinite-dimensional model

Monday 21 October 2024 16:45 (15 minutes)

Presenter: GULITSKIY, Nikolay (St Petersburg University)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 15

Type: **not specified**

Adsorptions of Hg, Cn, Pb and Fl Elements on Trigonal Selenium Surface from Periodic DFT Calculations

Monday 21 October 2024 17:00 (15 minutes)

Presenter: ILIAŠ, Miroslav (BLTP)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 16

Type: **not specified**

Three-loop calculation of dynamical exponent z of ph^3 theory

Monday 21 October 2024 17:15 (15 minutes)

Presenter: KOMPANIETS, Mikhail (BLTP)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 17

Type: **not specified**

Dunkl-relativistic particles in the presence of external fields with non-constant Ricci scalar

Monday 21 October 2024 17:30 (15 minutes)

Presenter: NASRI NASRABADI, Mehdi (FLNP)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 18

Type: **not specified**

MCNPX Evaluation of the Response Function of Bonner Sphere Spectrometers made of different moderating materials

Presenter: MOSLEMI MEHNI, Elaheh (University of Arak)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 19

Type: **not specified**

Sophisticated Techniques for Numerical Integration of Challenging Integrals: Extrapolation Methods and Asymptotics

Tuesday 22 October 2024 09:30 (35 minutes)

Presenter: SAFOUHI, Hassan (University of Alberta)

Session Classification: Plenary Session

Contribution ID: 20

Type: **not specified**

Modelling Quantum Randomness

Tuesday 22 October 2024 10:05 (35 minutes)

Presenter: CALUDE, Cristian (University of Auckland)

Session Classification: Plenary Session

Contribution ID: 21

Type: **not specified**

Dissipative search of unstructured database

Tuesday 22 October 2024 11:05 (35 minutes)

Presenter: ALLAHVERDYAN, Armen (AANL)

Session Classification: Plenary Session

Contribution ID: 22

Type: **not specified**

Artificial Intelligence Driven Automatic Adaptive Quadrature

Tuesday 22 October 2024 11:40 (35 minutes)

Presenter: ADAM, Gheorghe (MLIT)

Session Classification: Plenary Session

Contribution ID: 23

Type: **not specified**

Offline Software and Computing for the SPD experiment

Tuesday 22 October 2024 12:15 (35 minutes)

Presenter: ZHEMCHUGOV, Alexey (JINR)

Session Classification: Plenary Session

Contribution ID: 24

Type: **not specified**

Quantum-quasiclassical method for few-body process in atomic and nuclear physics

Wednesday 23 October 2024 09:30 (35 minutes)

Presenter: MELEZHIK, Vladimir (BLTP JINR Dubna)

Session Classification: Plenary Session

Contribution ID: 25

Type: **not specified**

The crisis of fundamental computer science and the need to create its new mathematical foundation

Presenter: BOGDANOV, Alexander (St.Petersburg State University)

Session Classification: Plenary Session

Contribution ID: 26

Type: **not specified**

Anonymous Computation Scheme for Robust Authentication in Self-Organizing UAV Swarms

Wednesday 23 October 2024 10:40 (35 minutes)

Presenter: ALAVERDYAN, Yeghisabet (IIAP NAS RA)

Session Classification: Plenary Session

Contribution ID: 27

Type: **not specified**

“GOVORUN” supercomputer for JINR tasks

Wednesday 23 October 2024 11:15 (35 minutes)

Presenter: ZUEV, Maxim (MLIT JINR)

Session Classification: Plenary Session

Contribution ID: 28

Type: **not specified**

Event Reconstruction in High-Energy Physics Experiments

Thursday 24 October 2024 11:05 (35 minutes)

Presenter: VOYTISHIN, Nikolay (JINR)

Session Classification: Plenary Session

Contribution ID: 29

Type: **not specified**

On Overcoming the Crisis of Particle Tracking in High-Luminosity Experiments using Deep Learning Methods

Friday 25 October 2024 11:40 (35 minutes)

Presenter: OSOSKOV, Gennady (Joint Institute for Nuclear Research)

Session Classification: Plenary Session

Contribution ID: 30

Type: **not specified**

JINR Participation in the construction and upgrade of CMS Experiment

Thursday 24 October 2024 09:30 (35 minutes)

Presenter: KARJAVINE, Vladimir (JINR)

Session Classification: Plenary Session

Contribution ID: **31**

Type: **not specified**

MPD software framework

Thursday 24 October 2024 10:05 (35 minutes)

Presenter: ROGACHEVSKY, Oleg (VBLHEP)

Session Classification: Plenary Session

Contribution ID: 32

Type: **not specified**

Computing Software Architecture for Distributed Processing of the BM@N Experiment Data

Friday 25 October 2024 12:15 (35 minutes)

Presenter: GERTSENBERGER, Konstantin (JINR)

Session Classification: Plenary Session

Contribution ID: 34

Type: **not specified**

Lattice study of rotating QCD properties

Friday 25 October 2024 10:05 (35 minutes)

Presenter: BRAGUTA, Victor (JINR)

Session Classification: Plenary Session

Contribution ID: 35

Type: **not specified**

On classical and weakened solutions of the Cauchy problem for one class of nonlinear parabolic equations

Friday 25 October 2024 10:40 (35 minutes)

Presenter: KHACHATRYAN, Khachatur (Yerevan State University)

Session Classification: Plenary Session

Contribution ID: 36

Type: **not specified**

Nanobioelectronics. Applications in information technologies.

Wednesday 23 October 2024 10:05 (35 minutes)

Presenter: LAKHNO, Victor (IMPB RAS)

Session Classification: Plenary Session

Contribution ID: 37

Type: **not specified**

Modeling the complexity of DNA damage and cell survival following the exposure of ionizing radiations with different characteristics

Friday 25 October 2024 12:50 (35 minutes)

Presenter: BUGAY, Aleksandr (LRB)

Session Classification: Plenary Session

Contribution ID: 38

Type: **not specified**

Basic tasks of artificial intelligence in multidisciplinary research

Monday 21 October 2024 14:15 (15 minutes)

Presenter: CHEREMISINA, Evgenia (Dubna State University)

Session Classification: Machine learning and big data analytics

Contribution ID: 39

Type: **not specified**

From Black Holes to Data Pipelines: A Physicist's Journey to Tech Innovation

Monday 21 October 2024 14:00 (15 minutes)

Presenter: SAGHATELIAN, Armen (TenWeb, Inc.)

Session Classification: Machine learning and big data analytics

Contribution ID: 40

Type: **not specified**

On the effectiveness of computer visual-language models in medical image analysis

Tuesday 22 October 2024 17:45 (15 minutes)

Presenter: SHCHETININ, Eugenio (Financial University under the Government of Russian the Federation)

Session Classification: Mathematical methods in life sciences

Contribution ID: 41

Type: **not specified**

Evaluation of Different Few-Shot Learning Methods for Plant Disease Classification

Presenter: UZHINSKIY, Alexander (MLIT)

Session Classification: Machine learning and big data analytics

Contribution ID: 42

Type: **not specified**

A deep learning model for automated quantification of DNA repair foci in somatic mammalian cells

Monday 21 October 2024 15:00 (15 minutes)

Presenter: SHADMEHRI, Sara (MLIT)

Session Classification: Machine learning and big data analytics

Contribution ID: 43

Type: **not specified**

Application of modern consolidation methods for processing complex medical data

Monday 21 October 2024 16:30 (15 minutes)

Presenter: SHCHEGOLEVA, Nadezhda (St Petersburg University)

Session Classification: Machine learning and big data analytics

Contribution ID: 44

Type: **not specified**

Development and Visualization of Cellular Automata Models for Predicting Heterogeneous Traffic Flows

Monday 21 October 2024 14:30 (15 minutes)

Presenter: TRAPEZNIKOVA, Marina (Keldysh Institute of Applied Mathematics RAS)

Session Classification: Machine learning and big data analytics

Contribution ID: 45

Type: **not specified**

Speaker Tagging Correction With Non-Autoregressive Language Models

Monday 21 October 2024 14:45 (15 minutes)

Presenter: KARAMYAN, Davit (Yerevan State University)

Session Classification: Machine learning and big data analytics

Contribution ID: 46

Type: **not specified**

Computer algorithms for synthetic images modelling based on diffusion models

Monday 21 October 2024 16:00 (15 minutes)

Presenter: TIUTIUNNIK, Anastasiia (RUDN University)

Session Classification: Machine learning and big data analytics

Contribution ID: 47

Type: **not specified**

Technology for selecting deep learning models based on actualized user experience using the Auto-ML approach

Monday 21 October 2024 16:15 (15 minutes)

Presenter: SMETANIN, Artem (ITMO University)

Session Classification: Machine learning and big data analytics

Contribution ID: 48

Type: **not specified**

An Investigation of Two-Level Data Processing for Packet Transmission Time Analysis Using Machine Learning Methods.

Monday 21 October 2024 17:00 (15 minutes)

Presenter: KIYAMOV, Jasur (St. Petersburg University)

Session Classification: Machine learning and big data analytics

Contribution ID: 49

Type: **not specified**

HybriLIT platform: services and environment for HPC calculations, mathematical modeling, data storage and analysis.

Monday 21 October 2024 14:15 (15 minutes)

Presenter: TOROSYAN, Shushanik (MLIT)

Session Classification: High-performance computing and Computer Science

Contribution ID: 50

Type: **not specified**

Supercomputing Centers and Their Impact on Research Output: Multinational Comparison

Monday 21 October 2024 14:00 (15 minutes)

Presenter: SARGSYAN, Shushanik (ILAP NAS RA)

Session Classification: High-performance computing and Computer Science

Contribution ID: 51

Type: **not specified**

CAST: Center of Advanced Software Technologies

Monday 21 October 2024 14:30 (15 minutes)

Presenter: SARGSYAN, Sevak (Russian-Armenian University)

Session Classification: High-performance computing and Computer Science

Contribution ID: 52

Type: **not specified**

Shifting from Slurm to Kube-Scheduler for Efficient Cloud-Native HPC Workloads with the Shoc Platform

Monday 21 October 2024 14:45 (15 minutes)

Presenter: PETROSYAN, Davit

Session Classification: High-performance computing and Computer Science

Contribution ID: 53

Type: **not specified**

Rule of the Second normal form

Thursday 24 October 2024 16:45 (15 minutes)

Presenter: DIMITROV, Vladimir (University of Sofia)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 54

Type: **not specified**

CVE, CWE and CPE Use Case

Monday 21 October 2024 15:00 (15 minutes)

Presenter: SARTABANOVA, Zhanar (K.Zhubanov Aktobe Regional University)

Session Classification: High-performance computing and Computer Science

Contribution ID: 55

Type: **not specified**

Three-Body Problem and Precision Physics

Monday 21 October 2024 16:00 (15 minutes)

Presenter: KOROBOV, Vladimir (BLTP, JINR, Dubna, Russia)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 56

Type: **not specified**

Some new algorithms for Monte-Carlo event generators

Monday 21 October 2024 16:15 (15 minutes)

Presenter: DYDYSHKA, Yahor (DLNP)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 57

Type: **not specified**

Polarized photon-photon collisions in ReneSANCe Monte Carlo generator

Monday 21 October 2024 16:30 (15 minutes)

Presenter: SADYKOV, Renat (JINR)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 58

Type: **not specified**

ReneSANCe event generator for precise luminosity determination

Monday 21 October 2024 16:45 (15 minutes)

Presenter: YERMOLCHYK, Vitaly (JINR; INP BSU)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 59

Type: **not specified**

Two-loop corrections to $2\gamma \rightarrow 2\gamma$ process

*Monday 21 October 2024 17:00 (15 minutes)***Presenter:** BONDARENKO, Serge (BLTP JINR)**Session Classification:** Methods and numerical algorithms in high-energy physics

Contribution ID: **60**Type: **not specified**

Iterative solution of DGLAP equations in QED

Monday 21 October 2024 17:15 (15 minutes)

Presenter: ARBUZOV, Andrej (BLTP JINR)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 61

Type: **not specified**

Radiative corrections to W^\pm boson hadroproduction with longitudinal polarization of initial states

Monday 21 October 2024 17:30 (15 minutes)

Presenter: KAMPF, Alexey (DLNP)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 62

Type: **not specified**

Plasma Diagnostics in High Magnetic Fields

Monday 21 October 2024 17:45 (15 minutes)

Presenter: OGANESYAN, Koryun (AANL & IEP SAS)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 63

Type: **not specified**

Parameterizing the entanglement body of a qubit pair

Tuesday 22 October 2024 14:00 (15 minutes)

Presenter: TOROSYAN, Astghik (LIT)

Session Classification: Methods of quantum computing and quantum information processing

Contribution ID: 64

Type: **not specified**

On multipartite generalization of X-states

*Tuesday 22 October 2024 14:15 (15 minutes)***Presenter:** ABGARYAN, Vahagn (JINR MLIT)**Session Classification:** Methods of quantum computing and quantum information processing

Contribution ID: 65

Type: **not specified**

Modeling Quantum Simulations with Various Methods

Tuesday 22 October 2024 14:30 (15 minutes)

Presenter: SAHAKYAN, Roman (RAU)

Session Classification: Methods of quantum computing and quantum information processing

Contribution ID: 66

Type: **not specified**

An approach to quantum channel state estimation based on machine learning models

Tuesday 22 October 2024 14:45 (15 minutes)

Presenter: NIGMATULLIN, Roman (HSE University)

Session Classification: Methods of quantum computing and quantum information processing

Contribution ID: 67

Type: **not specified**

Polarization drift compensation using supervised and reinforcement learning

Tuesday 22 October 2024 15:00 (15 minutes)

Presenter: KAGRAMANYAN, David (Higher Schools of Economics)

Session Classification: Methods of quantum computing and quantum information processing

Contribution ID: 68

Type: **not specified**

Molecular Dynamics of the FUS Protein Fibril: Phosphorilation Effect

Tuesday 22 October 2024 16:00 (15 minutes)

Presenter: MAMASAKHLISOV, Yevgeni (Yerevan State University)

Session Classification: Mathematical methods in life sciences

Contribution ID: 69

Type: **not specified**

Effect of oxidative stress on the structure of glutamate receptors and membranes in neural cells

Tuesday 22 October 2024 16:15 (15 minutes)

Presenter: DUSHANOV, Ermuhammad (LRB)

Session Classification: Mathematical methods in life sciences

Contribution ID: 70

Type: **not specified**

Terahertz oscillating kinks in microtubules

Tuesday 22 October 2024 16:45 (15 minutes)

Presenter: USTINOV, Nikolai (LRB)

Session Classification: Mathematical methods in life sciences

Contribution ID: 71

Type: **not specified**

Cells recognition of the sensomotor cortex on histological images

Tuesday 22 October 2024 17:00 (15 minutes)

Presenter: DIVAKOV, Dmitriy (Peoples' Friendship University of Russia)

Session Classification: Mathematical methods in life sciences

Contribution ID: 72

Type: **not specified**

Service for correlation analysis of radiofrequency pulses of MR tomograph and output MRI data

Presenter: ENYAGINA, Irina (Kurchatov Institute)

Session Classification: Mathematical methods in life sciences

Contribution ID: 73

Type: **not specified**

Hockey stick model reveals a dose threshold for the residual foci of DDR proteins

Tuesday 22 October 2024 17:15 (15 minutes)

Presenter: OSIPOV, Andrey

Session Classification: Mathematical methods in life sciences

Contribution ID: 74

Type: **not specified**

Web Service for the Trajectory Analysis of Laboratory Animals in the «Morris Water Maze»

Tuesday 22 October 2024 17:30 (15 minutes)

Presenter: BEZHANYAN, Tatevik (LIT JINR)

Session Classification: Mathematical methods in life sciences

Contribution ID: 76

Type: **not specified**

Application of minimax optimization for solving the Dirac equation for the two attractif centers.

Tuesday 22 October 2024 14:00 (15 minutes)

Presenter: JOULAKIAN, Boghos (Université de Lorraine)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 77

Type: **not specified**

Simulation of a controllable magnetization reversal in a chain of Φ_0 junctions by an alternating voltage pulse

Tuesday 22 October 2024 14:15 (15 minutes)

Presenter: RAHMONOVA, Adiba (Joint Institute for Nuclear Research)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 78

Type: **not specified**

Chaotic features of a stack of long Josephson junctions with inductive and capacitive couplings

Tuesday 22 October 2024 14:30 (15 minutes)

Presenter: RAHMONOV, Ilhom (BLTP, Joint Institute for Nuclear Research)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 79

Type: **not specified**

Application of the KANTBP 3.1 program and its modifications to the study of some nuclear reactions processes

Tuesday 22 October 2024 14:45 (15 minutes)

Presenter: CHULUUNBAATAR, Ochbadrakh (MLIT)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 80

Type: **not specified**

Electron-Hydrogen Compton Scattering at High Momentum Transfer: Calculations of Second Born Singular Integrals

Tuesday 22 October 2024 15:00 (15 minutes)

Presenter: POPOV, Yuri (Nuclear Physics Institute (MSU))

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 81

Type: **not specified**

ϕ^4 oscillons as standing waves in a ball: a numerical study

Tuesday 22 October 2024 15:15 (15 minutes)

Presenter: ZEMLYANAYA, Elena (Joint Institute for Nuclear Research, Dubna, Russia)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 83

Type: **not specified**

On a method for numerical solution of a time-dependent Schrödinger equation based on Lee-Trotter-Suzuki formula

Tuesday 22 October 2024 16:00 (15 minutes)

Presenter: ZAKHAROV, Maxim (FLNP)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 84

Type: **not specified**

Construction of Fisher information matrix for multiparametric problem in super-resolution optical fluctuation imaging

Tuesday 22 October 2024 16:15 (15 minutes)

Presenter: MIKHALYCHEV, Alexander (B.I. Stepanov Institute of Physics, NAS of Belarus)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 86

Type: **not specified**

Fast Reconstruction of Programmable Integrated Interferometers

Tuesday 22 October 2024 16:30 (15 minutes)

Presenter: BANTYSH, Boris (Valiev Institute of Physics and Technology, Russian Academy of Sciences, Moscow, Russia)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 87

Type: **not specified**

Nanoroughness induced anti-reflection and haze effects in opaque systems

Tuesday 22 October 2024 16:45 (15 minutes)

Presenter: GAREYAN, Vigen (AANL)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 88

Type: **not specified**

Prediction of Flows with Porous Inclusions Using the Generalized QGD-System of Equations

Tuesday 22 October 2024 17:00 (15 minutes)

Presenter: CHURBANOVA, Natalia (Keldysh Institute of Applied Mathematics of Russian Academy of Sciences (KIAM RAS))

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 89

Type: **not specified**

Optimization of the neutron spectrum unfolding algorithm based on Tikhonov regularization and shifted Legendre polynomials

Tuesday 22 October 2024 17:15 (15 minutes)

Presenter: CHIZHOV, Konstantin (MLIT)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 90

Type: **not specified**

Hypernuclei signal reconstruction in the BM@N experiment

Tuesday 22 October 2024 14:00 (15 minutes)

Presenter: MERTS, Sergei (JINR, LHEP)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 91

Type: **not specified**

A computer model of microstrip coordinate detectors for the hybrid tracker of the BM@N experiment

Tuesday 22 October 2024 14:15 (15 minutes)

Presenter: BARANOV, Dmitry (MLIT)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 92

Type: **not specified**

Hadron Cluster Finding in the SPD/NICA

Tuesday 22 October 2024 14:30 (15 minutes)

Presenter: BUDKOUSKI, Dzmitry

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 93

Type: **not specified**

Methods for Aligment of multylayer 2D coordinate detectors

Tuesday 22 October 2024 14:45 (15 minutes)

Presenter: KAMENEV, Alexey (VBLHEP)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 94

Type: **not specified**

CMS Open Data: Dimuons Lessons

Tuesday 22 October 2024 15:00 (15 minutes)

Presenter: KORSAKOV, Iurii (MLIT)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 95

Type: **not specified**

Simulation of Dark Matter Production within the extended 2HDM models

Tuesday 22 October 2024 15:15 (15 minutes)

Presenter: SLIZHEVSKIY, Kirill (Isu)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 96

Type: **not specified**

Mathematical model of fractal thermodynamics and analysis of produced particle tracks within the MPD experiment

Tuesday 22 October 2024 16:00 (15 minutes)

Presenter: VOYTISHIN, Nikolay (JINR)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 97

Type: **not specified**

Evolution of the Resource Manager of the ATLAS Trigger and Data Acquisition System

Tuesday 22 October 2024 16:45 (15 minutes)

Presenter: ALEXANDROV, Igor (MLIT)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 98

Type: **not specified**

Pythia generator parameters tuning with Professor2 package oriented for Belle2 physics

Tuesday 22 October 2024 16:15 (15 minutes)

Presenter: GHUMARYAN, Hazaravard (A.I. Alikhanyan National Science Laboratory)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 99

Type: **not specified**

Automatic Build and Distribution of Software for MPD of the NICA project

Tuesday 22 October 2024 16:30 (15 minutes)

Presenter: BUŠA JR., Ján (MLIT JINR)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 100

Type: **not specified**

Production of the Configuration Information system for the BM@N experiment

Tuesday 22 October 2024 17:15 (15 minutes)

Presenter: YAKOVLEV, Alexander (JINR)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: **101**Type: **not specified**

Flexibility extension of the Event Picking service for ATLAS experiment

Tuesday 22 October 2024 17:00 (15 minutes)

Presenter: ALEXANDROV, Evgeny (JINR)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: **102**Type: **not specified**

Production system of the SPD experiment

Tuesday 22 October 2024 17:30 (15 minutes)

Presenter: PETROSYAN, Artem (JINR)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: 103

Type: **not specified**

NDMSPC - EOS and N-Dimensional Analysis with ROOT, Enhanced by Web Interface and VR Visualization

Tuesday 22 October 2024 17:45 (15 minutes)

Presenter: VALA, Martin (JINR)

Session Classification: Modern methods for data processing and analysis in Mega-science projects

Contribution ID: **104**Type: **not specified**

Specifics of AI Generative Models When Used for Particle Physics

Thursday 24 October 2024 14:00 (15 minutes)

Presenter: RATNIKOV, Fedor (HSE University)

Session Classification: Machine learning and big data analytics

Contribution ID: 105

Type: **not specified**

Optimisation of the Accelerator Control by Reinforcement Learning: A Simulation-based Approach

Thursday 24 October 2024 14:15 (15 minutes)

Presenter: IBRAHIM, Anwar

Session Classification: Machine learning and big data analytics

Contribution ID: **106**

Type: **not specified**

Machine Learning for Particle Identification at MPD

Thursday 24 October 2024 14:30 (15 minutes)

Presenter: PAPOYAN, Vladimir (JINR & AANL)

Session Classification: Machine learning and big data analytics

Contribution ID: 107

Type: **not specified**

Deep learning methods in high luminosity track reconstruction scenario: applying TrackNET to TrackML challenge

Thursday 24 October 2024 14:45 (15 minutes)

Presenter: RUSOV, Daniil (Joint Institute for Nuclear Research)

Session Classification: Machine learning and big data analytics

Contribution ID: **109**Type: **not specified**

Machine Learning for Cyclotron Magnetic Field Isochronization

Monday 21 October 2024 16:45 (15 minutes)

Presenter: LYAPIN, Ivan (DLNP)

Session Classification: Machine learning and big data analytics

Contribution ID: 110

Type: **not specified**

On precursors of topological phase transitions of interacting particles confined in a disk potential

Thursday 24 October 2024 16:00 (15 minutes)

Presenter: NIKONOV, Eduard (LIT JINR)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 111

Type: **not specified**

A Python-based analytical computing module for automating the representation of equations for further numerical simulation of a chain of nanomagnets coupled to a Josephson junction

Thursday 24 October 2024 17:00 (15 minutes)

Presenter: ZUEV, Maxim (MLIT JINR)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 112

Type: **not specified**

Computational environment for the numerical modelling of hybrid superconductor / magnetic nanostructures

Thursday 24 October 2024 16:45 (15 minutes)

Presenter: NECHAEVSKIY, Andrey (JINR)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 113

Type: **not specified**

Computational simulation as a tool of investigating the behavior of a marine object in storm conditions

Thursday 24 October 2024 16:00 (15 minutes)

Presenter: DEGTYAREV, Alexander (St.Petersburg University)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 114

Type: **not specified**

A web application for fitting experimental data using JINR cloud infrastructure and ROOT package tools

Thursday 24 October 2024 16:30 (15 minutes)

Presenter: LUKYANOV, Konstantin (MLIT, JINR)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 115

Type: **not specified**

Kinetic modeling of the IEC device in order to predict the number of produced ions

Presenter: GHAMMAS, Hasan (University of Isfahan)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 116

Type: **not specified**

Numerical scheme for relativistic Boltzmann equation with spherical geometry

Thursday 24 October 2024 14:00 (15 minutes)

Presenter: PRAKAPENIA, Mikalai (Stepanov Institute of Physics)

Session Classification: Numerical and analytical calculations in modern mathematical physics

Contribution ID: 117

Type: **not specified**

Implementations of the finite element method for the collective model of atomic nuclei

Thursday 24 October 2024 14:15 (15 minutes)

Presenter: GUSEV, Alexander (MLIT)

Session Classification: Numerical and analytical calculations in modern mathematical physics

Contribution ID: 118

Type: **not specified**

A class of symmetric three-body periodic free-fall orbits

Thursday 24 October 2024 14:30 (15 minutes)

Presenter: HRISTOV, Ivan (Sofia University, Bulgaria)

Session Classification: Numerical and analytical calculations in modern mathematical physics

Contribution ID: 119

Type: **not specified**

A Fourier-modal approach to free-form simulations of diffractive optics

Thursday 24 October 2024 14:45 (15 minutes)

Presenter: NIKOLAEV, Konstantin (Kurchatov Institute)

Session Classification: Numerical and analytical calculations in modern mathematical physics

Contribution ID: 120

Type: **not specified**

Asymptotic method for modeling electromagnetic wave propagation in irregular waveguides

Thursday 24 October 2024 15:00 (15 minutes)

Presenter: STARIKOV, Danila (RUDN University)

Session Classification: Numerical and analytical calculations in modern mathematical physics

Contribution ID: 121

Type: **not specified**

Finite Difference Models of Dynamical Systems with Polynomial Right-Hand Side

Thursday 24 October 2024 15:15 (15 minutes)

Presenter: MALYKH, Mikhail (RUDN University)

Session Classification: Numerical and analytical calculations in modern mathematical physics

Contribution ID: 122

Type: **not specified**

PI-type fully symmetric quadrature rules on the 3-,, 6-simplexes

Thursday 24 October 2024 16:00 (15 minutes)

Presenter: CHULUUNBAATAR, Galmandakh (JIIT)

Session Classification: Numerical and analytical calculations in modern mathematical physics

Contribution ID: 123

Type: **not specified**

Optimum Number of CUDA Streams for the GPU Implementation of the Tridiagonal Partition Method

Thursday 24 October 2024 16:15 (15 minutes)

Presenter: VENEVA, Milena (JINR)

Session Classification: Numerical and analytical calculations in modern mathematical physics

Contribution ID: 124

Type: **not specified**

Quantum thermodynamics of single-particle systems from first principles

Thursday 24 October 2024 16:30 (15 minutes)

Presenter: GEVORKYAN, Ashot (IIAP NAS RA)

Session Classification: Numerical and analytical calculations in modern mathematical physics

Contribution ID: 125

Type: **not specified**

The General Three-Body Problem in Conformal-Euclidean Space: Hidden Symmetries and New Properties of a Low-Dimensional System

Thursday 24 October 2024 16:45 (15 minutes)

Presenter: MAREEV, Vladimir (St.Petersburg University)

Session Classification: Numerical and analytical calculations in modern mathematical physics

Contribution ID: 127

Type: **not specified**

Nonrelativistic approximation in the theory of a spin 2 particle with anomalous magnetic moment

Thursday 24 October 2024 14:00 (15 minutes)

Presenter: RED'KOV, Viktor (Stepanov Institute of Physics)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 128

Type: **not specified**

Track Reconstruction Transformer (TRT): A Scalable Deep Learning Approach for Particle Tracking in High-Energy Physics

Thursday 24 October 2024 15:00 (15 minutes)

Presenter: NIKOLSKAIA, Anastasiia

Session Classification: Machine learning and big data analytics

Contribution ID: 129

Type: **not specified**

Modified transport approach for description of fragmentation reactions in heavy-ion collisions

Thursday 24 October 2024 14:15 (15 minutes)

Presenter: MIKHAILOVA, Tatiana (MLIT)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 131

Type: **not specified**

Reconstruction of Neutron Star Mass Distribution from Cooling Evolution

Thursday 24 October 2024 14:30 (15 minutes)

Presenter: GRIGORIAN, Hovik (JINR)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 132

Type: **not specified**

Numerical Modeling of Thermodynamic Parameters for Hot Neutron Star Matter in Neutrino-Trapped Regime

Thursday 24 October 2024 14:45 (15 minutes)

Presenter: ALAVERDYAN, Grigor (Yerevan State University)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 133

Type: **not specified**

Geant4 hadronic models

Thursday 24 October 2024 16:15 (15 minutes)

Presenter: UZHINSKY, Vladimir (MLIT)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 134

Type: **not specified**

Coupling of UrQMD 3.4 and SMM models for simulation of neutron and nuclear fragment productions in nucleus-nucleus interactions

Thursday 24 October 2024 16:30 (15 minutes)

Presenter: GALOYAN, Aida (VBLHEP)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 136

Type: **not specified**

Numerical modeling of gamma sources based on nonlinear Compton Scattering

Thursday 24 October 2024 15:00 (15 minutes)

Presenter: RYKOVANOV, Sergey (Skoltech)

Session Classification: Methods and numerical algorithms in high-energy physics

Contribution ID: 137

Type: **not specified**

Kinetic modeling of the IEC device in order to predict the number of produced ions

Monday 21 October 2024 17:45 (15 minutes)

Presenter: GHAMMAS, Hasan (University of Isfahan)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 138

Type: **not specified**

Neural networks in the Baikal-GVD experiment: selection of neutrino events and neutrino energy reconstruction

Thursday 24 October 2024 15:15 (15 minutes)

Presenter: MATSEIKO, Albert (MIPT, INR RAS)

Session Classification: Machine learning and big data analytics

Contribution ID: 139

Type: **not specified**

Algorithm for identification of the equilibrium position of a marine object in the conditions of sea waves

Thursday 24 October 2024 16:15 (15 minutes)

Presenter: GONCHARUK, Daniil (St.Petersburg State University)

Session Classification: Mathematical methods and tools for modeling complex physical systems

Contribution ID: 140

Type: **not specified**

Fluence and Absorbed Dose Calculations for the Biological Samples Irradiated with Heavy Ion Beams at the Long-Term modes

Tuesday 22 October 2024 16:30 (15 minutes)

Presenter: PUKHAEVA, Nelli (JINR & NOSU)

Session Classification: Mathematical methods in life sciences

Contribution ID: 141

Type: **not specified**

SANC for higher calculation: application to e^+e^- -factories, $\gamma\gamma$ -colliders, $pp(p\bar{p})$ -accelerators

Friday 25 October 2024 09:30 (35 minutes)

Presenter: KALINOVSKAYA, Lidia (JINR)

Session Classification: Plenary Session