

Fourth workshop on Soliton Theory, Nonlinear Dynamics and Machine Learning

Report of Contributions

Contribution ID: 2

Type: **not specified**

ARRIVAL

Monday, 24 August 2026 13:00 (10h 59m)

Contribution ID: 3

Type: **not specified**

OPENING

Tuesday, 25 August 2026 09:30 (30 minutes)

Contribution ID: 4

Type: **not specified**

Higher-dimensional integrable systems. Algebraic aspects and reductions.

Tuesday, 25 August 2026 10:00 (45 minutes)

Presenter: STEFANOV, Aleksander

Contribution ID: 5

Type: **not specified**

MNLS and Generalized Fourier Transforms for Constant Boundary Conditions

Tuesday, 25 August 2026 11:00 (45 minutes)

Presenter: GERDJIKOV, Vladimir

Contribution ID: 6

Type: **not specified**

Classification on line solitons of KP type integrable systems

Tuesday, 25 August 2026 11:45 (45 minutes)

Presenter: CHUANZHONG, Li

Contribution ID: 7

Type: **not specified**

Characterization of Riemannian and Lorentzian Manifolds via the Jacobi Operator

Tuesday, 25 August 2026 14:30 (40 minutes)

Presenter: VIDEV, Veselin

Contribution ID: 8

Type: **not specified**

Solitons and Spirals: Connections in Nonlinear Dynamics and Biology

Tuesday, 25 August 2026 15:10 (30 minutes)

Presenter: PIROVSKI, Nikola

Contribution ID: 9

Type: **not specified**

Machine Learning on Symmetric Spaces. Basics.

Saturday, 29 August 2026 09:30 (40 minutes)

Presenter: MISHEV, Stoyan

Contribution ID: **10**

Type: **not specified**

Machine Learning on Symmetric Spaces. Structure of a Neural Network.

Saturday, 29 August 2026 10:10 (30 minutes)

Presenter: FOTEVA, Yoana

Contribution ID: **11**

Type: **not specified**

General discussion

Tuesday, 25 August 2026 16:00 (2 hours)

Contribution ID: 12

Type: **not specified**

Negative and rational flows of the integrable hierarchies

Thursday, 27 August 2026 09:30 (40 minutes)

Presenter: IVANOV, Rossen

Contribution ID: 13

Type: **not specified**

Derivation of the Nonlinear Schrodinger Equation in the Intermediate Long Wave Regime

Thursday, 27 August 2026 10:10 (30 minutes)

Presenter: IVANOVA, Lyudmila

Contribution ID: 14

Type: **not specified**

Extreme Events in Soliton Turbulence in Nonintegrable Systems

Thursday, 27 August 2026 15:40 (30 minutes)

Presenter: FLAMARION, Marcelo

Contribution ID: 15

Type: **not specified**

Scalable Approximation of Laplacian Eigenmodes for Spectral Routing in Service-Provider Networks

Thursday, 27 August 2026 11:40 (30 minutes)

Presenter: VEKOV, Hristo

Contribution ID: 16

Type: **not specified**

On the derivative nonlinear Schrödinger equation related to symmetric spaces

Thursday, 27 August 2026 14:00 (40 minutes)

Presenter: GRAHOVSKI, Georgi

Contribution ID: 17

Type: **not specified**

SOME NEW RESULTS INVOLVING INEQUALITIES OF GRONWALL–BELLMAN TYPE

Thursday, 27 August 2026 14:40 (30 minutes)

Presenter: MARKOV, Lubomir

Contribution ID: **18**

Type: **not specified**

Soliton and Periodic Wave Solutions of the Modified Korteweg–de Vries Equation

Thursday, 27 August 2026 15:10 (30 minutes)

Presenter: MARINOVA, Rossitza S.

Contribution ID: **19**

Type: **not specified**

General discussion

Thursday, 27 August 2026 17:10 (50 minutes)

Contribution ID: 20

Type: **not specified**

Training Bulgarian Language Embeddings from Scratch through Self-Supervised Learning and Contrastive Learning

Saturday, 29 August 2026 11:00 (30 minutes)

Presenter: BLAJEV, Nikola

Contribution ID: 21

Type: **not specified**

Data-Driven Multi-Objective Optimization for Smart Urban Distribution Networks

Friday, 28 August 2026 14:00 (40 minutes)

Presenter: MELIKUZIEV, Mirkomil

Contribution ID: 22

Type: **not specified**

Design and Permanent Magnets Reduction of Linear Oscillatory Machine for Reciprocating Drives

Wednesday, 26 August 2026 09:30 (40 minutes)

Presenter: HORNÍK, Matúš

Contribution ID: 23

Type: **not specified**

Universal Multi-Phase Inverter Platform for Advanced Motor Control

Wednesday, 26 August 2026 11:00 (40 minutes)

Presenter: PODUŠEL, Tomáš

Contribution ID: 24

Type: **not specified**

Transient and Steady-State Dynamic Modeling of Synchronous Machine: TSFEM and the Winding Function Method

Friday, 28 August 2026 15:20 (40 minutes)

Presenter: KAJEVIĆ, Aldin

Contribution ID: 25

Type: **not specified**

Unsupervised Vibration Fault Detection Using Hilbert-Huang Transformation-Based Feature Extraction and Mahalanobis Analysis

Wednesday, 26 August 2026 10:10 (30 minutes)

Presenter: KOLEV, Atanas

Contribution ID: 26

Type: **not specified**

Forward-Collision and Lane-Departure Warning on Edge AI Accelerators: A Cross-Device Evaluation of Raspberry Pi 5 and Jetson Orin Nano Super.

Wednesday, 26 August 2026 14:00 (30 minutes)

Presenter: TEMELAKIEV, Lyuben

Contribution ID: 27

Type: **not specified**

General discussion

Wednesday, 26 August 2026 15:50 (2h 10m)

Contribution ID: 28

Type: **not specified**

Methodology for the Migration and Acceleration of an Open-Source Semiconductor Bloch Equation Solver Using Multi-Core CPU and GPU/CUDA Computing

Friday, 28 August 2026 14:40 (40 minutes)

Presenter: PETROV, Georgi

Contribution ID: 29

Type: **not specified**

GENERATION OF QUANTUM CORRELATIONS IN GAUSSIAN OPEN QUANTUM SYSTEMS

Friday, 28 August 2026 09:30 (40 minutes)

Presenter: ISAR, Aurelian

Contribution ID: 30

Type: **not specified**

Gaussian entanglement and steering of strongly coupled bosonic modes in a common phase-sensitive environment

Friday, 28 August 2026 10:30 (40 minutes)

Presenter: MIHAESCU, Tatiana

Contribution ID: 31

Type: **not specified**

Cooperative Effects in Two Dipole–Dipole Coupled Emitters Driven by a Moderately Strong Laser Field

Friday, 28 August 2026 11:10 (40 minutes)

Presenter: CUDREASOV, Alexander

Contribution ID: 32

Type: **not specified**

Beyond Pass Completion: Automated Detection of Line-Breaking Passes in Association Football Using Limb Tracking Data and Their 3D Perceptual Reconstruction and Visualization

Wednesday, 26 August 2026 14:30 (30 minutes)

Presenter: MANOLOV, Vladislav

Contribution ID: 33

Type: **not specified**

Comparative Study of Static Heterogeneous Graph Neural Networks and XGBoost for Credit Card Fraud Detection

Saturday, 29 August 2026 11:30 (30 minutes)

Presenter: DJOUNAKOV, Krassimir

Contribution ID: 34

Type: **not specified**

Necessary and sufficient conditions for an equation to accept a given type of solutions

Thursday, 27 August 2026 11:00 (40 minutes)

Presenter: PAUNA, Alina

Contribution ID: 35

Type: **not specified**

Time Reparametrization Invariance and the Hubble Tension

Thursday, 27 August 2026 16:10 (40 minutes)

Presenter: GUEORGUIEV, Vesselin

Contribution ID: 36

Type: **not specified**

General discussion

Friday, 28 August 2026 16:20 (1h 40m)

Contribution ID: 37

Type: **not specified**

Axion contribution to the mass-radius relation of neutron stars

Wednesday, 26 August 2026 15:00 (30 minutes)

Presenter: NAYDENOV, Momchil