Session Program

22–26 Jun 2026



MATHEMATICAL MODELING AND COMPUTATIONAL PHYSICS 2026

Mathematical Modeling and Computational Physics - MMCP'2026

Mathematical methods in life sciences

Thursday 25 June

14:00

Mathematical methods in life sciences

Session | **Location:** MLIT, Room 406

14:00–14:15

Computation of Structural Chromosome Aberrations in Human Blood after Irradiation with Therapeutic Proton Beams

Speaker
Dr Batmunkh Munkhbaatar

14:15–14:30

Holstein model of charge transfer taking into account the transition between strands of DNA duplex

Speaker
Nadezhda Fialko

14:30–14:45

Quantum entanglement processes in the DNA - mRNA system

Speaker
Sergey Shirmovsky

14:45–15:00

Кинетическая модель механизмов НГСК и МГСК в клетках млекопитающих и человека

Speaker
Эрмухаммад Душанов

15:00–15:15

Comparative Analysis of Ionisation Cluster Size Distributions in Sub-cellular Structures using Geant4-DNA

Speaker
Matvey Vologzhin

15:15–15:30

Mathematical Modeling of Albumin Filtration in the Glomerular Capillary of the Human Nephron

Speaker
Ms Anastasiya Gutsu

15:45–16:00

Stratification of thyroid nodules by Eu-TIRADS categories using transfer learning of convolutional neural networks

Speaker
Yulia P. Sych

16:00

16:20

Mathematical methods in life sciences

Session | **Location:** MLIT, Room 406

16:20–16:35

Multifactorial mathematical model for selecting optimal ventilation flow values when connecting a patient to an artificial lung ventilation device / Многофакторная математическая модель выбора оптимальных значений вентиляционного потока при подключении пациента к аппарату искусственной вентиляции легких

Speaker
Alexander Kryanev

16:35–16:50

Neural activity and pattern recognition modeling based on the electrical activity of neurons in the basal ganglia of Parkinson's disease patients

Speaker
Houchn Zhou

16:50–17:05

Photochemical bleaching kinetics of archaerhodopsin-3 reveal bacterioruberin-dependent stabilization

Speaker
Elizaveta Dronova

17:05–17:20

Multiscale modeling of inactivated actin: from apo-monomer dynamics to solution-dependent oligomerization

Speakers
Daria Kuklina, Dr Yury Ryzhykau

17:20–17:35 **Using Path Sampling to Model Binding Kinetics in the Barnase-Barstar System**

Speaker
Sergey Poluyan

17:35–17:50 **Algorithm for detecting palindromes in RNA**

Speakers
Georgii Khaziev, Ms Sofia Mankevich

17:50–18:05

Automated system for monitoring the phytosanitary state of vineyards using UAVs and computer vision algorithms

Speaker
Sergey Samarin

18:20

Friday 26 June

09:00

Mathematical methods in life sciences

Session | **Location:** MLIT, Room 406

09:00–09:15

Stoichiometric constraints for reducing non-uniqueness in SAXS modeling of detergent-solubilized membrane proteins

Speakers
Daria Kuklina, Yury Ryzhykau

09:15–09:30

Development of the "MOSTLIT" Web Service for Radiation-Induced Foci Analysis

Speaker
Татевик Бежанян

09:30–09:45

Investigation of the radiation-induced effects on melanoma growth using the spatially distributed phenomenological mathematical model with immune control

Speaker
Dr Nikolai Ustinov

09:45–10:00

Unsupervised Behavioral Clustering of Rodent Trajectories in the Morris Water Maze

Speaker
Сара Шадмехри

10:00–10:15

Computer Vision (CV) Algorithms and Deep Learning Models for Radiobiological Research Experimental Data Analysis Using the «Open Field» Behavioral Test System

Speaker
Alexey Chubov

11:00