



2023  
**IMEA**

# SCIENTIFIC PROGRAM

INTERNATIONAL SCIENTIFIC CONFERENCE

**“INFORMATICS, MATHEMATICS,  
EDUCATION AND THEIR  
APPLICATIONS”**

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29 Nov – 01 Dec 2023 • Pamporovo, Bulgaria

## Organizer

Faculty of Mathematics and Informatics  
Paisii Hilendarski University of Plovdiv

## 29.11.2023 ► HALL A

- 17:00 – 17:20 Official opening of the conference
- 17:20 – 17:40 Snezhana Hristova, Svetoslav Nenov, 90 YEARS OF THE BIRTH OF PROF. DRUMI BAINOV – MATHEMATICS, FMI, PLOVDIV AND MORE
- 17:40 – 18:00 Asen Rahnev, PROF. DRUMI BAINOV – DOCTOR HONORIS CAUSA OF PAISII HILENDARSKI UNIVERSITY OF PLOVDIV

## 30.11.2023 ► HALL A

- 09:00 – 09:15 Todorka Glushkova, AI ANDS ITS APPLICATION TO PERSONALIZATION OF PROGRAMMING LEARNING IN STEAME INTEREST CLUBS
- 09:15 – 09:30 Todorka Glushkova, Asya Stoyanova-Doycheva, Anna Malinova, FACILITATE – AI: GUIDELINES FOR FACILITATING THE LEARNING OF ARTIFICIAL INTELLIGENCE (AI) BY SCHOOL STUDENTS OF GRADES 7-12
- 09:30 – 09:45 Marta Teofilova, Todorka Glushkova, Vanya Ivanova, Boyan Zlatanov, STEAME TEACHER FACILITATORS ACADEMY
- 09:45 – 10:00 Vanya Ivanova, Todorka Glushkova, Konstantin Rusev, A HYBRID MODEL FOR STUDENT ASSESSMENT IN A VIRTUAL EDUCATIONAL ENVIRONMENT
- 10:00 – 10:15 Evgeni Valchev, Dimitar Stoyanov, Todorka Glushkova, APPLICATION OF COMPUTER VISION IN THE PREVENTION OF TEACHER BURNOUT
- 10:15 – 10:30 Veneta Tabakova-Komsalova, Laska Kostadinova-Tzankova, Atanas Dukovski, STEM TRAINING WITH PROLOG
- 10:30 – 11:00 **BREAK**
- 11:00 – 11:20 **Invited talk:** Gregory Makrides, ARE UNIVERSITY DEGREE PROGRAMMES IN DANGER?
- 11:30 – 11:45 Ivan Shotlekov, PROJECT PITCHING SKILLS FOR IT STUDENTS
- 11:45 – 12:00 Daniela Cvetkova, Marta Teofilova, Penka Rangelova, TRIANGLE INEQUALITY IN SQUARE ROOT PROBLEMS
- 12:00 – 14:00 **LUNCH BREAK**

14:00 – 14:20

**Invited talk:** Kheireddine Benia, Zoubida Bouazza, Mohammed Said Souid, EXISTENCE SOLUTIONS OF NONLINEAR FRACTIONAL INTEGRAL EQUATIONS WITH VARIABLE ORDER OF THE VOLTERRA TYPE WITH A NEW APPROACH

14:20 – 14:40

**Invited talk:** Ovidiu Cârjă, Alina Lazu, ON NULL CONTROLLABILITY AND THE MINIMUM TIME PROBLEM

14:40 – 15:00

**Invited talk:** Mohammed Abbas, EXISTENCE AND STABILITY RESULTS OF  $(\mu, \phi)$ -HILFER FRACTIONAL INTEGRO-DIFFERENTIAL EQUATIONS

15:00 – 15:15

Atanaska Georgieva, DOUBLE FUZZY NATURAL TRANSFORM TO SOLVE FUZZY CONVOLUTION VOLTERRA INTEGRAL EQUATIONS

15:15 – 15:30

Mancho Manev, YAMABE SOLITONS AND YAMABE ALMOST SOLITONS WITH VERTICAL POTENTIAL ON SOME SPECIAL TYPES OF ALMOST CONTACT COMPLEX RIEMANNIAN MANIFOLDS

15:30 – 16:00

**BREAK**

16:00 – 16:15

Pavlina Atanasova, Valentin Georgiev, NUMERICAL SOLVING OF THE SINE-GORDON EQUATION

16:15 – 16:30

Atanas Ilchev, Boyan Zlatanov, USE OF COMPUTER ALGEBRA SYSTEMS FOR SOLVING OF LIMITS ON FUNCTIONS BY APPLYING L'HOSPITAL'S RULES

16:30 – 16:45

Yordan Epitropov, Nako Nachev, ISOMORPHISM OF FINITE HAMILTONIAN GROUPS

16:45 – 17:00

Petar Kopanov, EXAMPLES OF EVENTS THAT ARE PAIRWISE INDEPENDENT BUT NOT MUTUALLY INDEPENDENT

17:00 – 20:00

**Mini Conference “FACILITATE-AI Multiplier Event”**

## 30.11.2023 ► HALL B

09:00 – 09:15

Stanimir Stoyanov, Laska Kostadinova-Tzankova, Asya Stoyanova-Doycheva, Veneta-Tabakova-Komsalova, BASIC CONCEPTS OF INTELLIGENT FOOD SUPPLY CHAIN

09:15 – 09:30

Stanimir Stoyanov, Veneta Tabakova-Komsalova, Asya Stoyanova-Doycheva, Emil Doichev, IDENTIFICATION OF ANOMALIES IN INTELLIGENT AGRICULTURE SYSTEMS

09:30 – 09:45

Stanimir Stoyanov, Veneta Tabakova-Komsalova, Lyubka Dukovska, Milena Kyumurdzhieva, GENERATIVE ARTIFICIAL INTELLIGENCE SUPPORTING FARMERS

09:45 – 10:00

Tsvetomira Ivanova, Sebiha Madanska, Ivan Stoyanov, FORMAL REPRESENTATION OF BULGARIAN FOLK DANCES

10:00 – 10:15

Rosen Hristev, Magdalena Veselinova, Kristiyan Kolev, OPTIMIZING METHOD FOR AUTOMATING THE PROCESS OF CREATION AND RESTORATION OF BACKUPS FOR CONTAINER DISK VOLUMES

10:15 – 10:30

Nikola Valchanov, EXTENDABLE SYSTEM FOR WORKFLOW ORCHESTRATION

10:30 – 11:00

**BREAK**

11:00 – 11:15

Stefani Paunova, Vladimir Valkanov, THE PLACE OF ARTIFICIAL INTELLIGENCE IN MEDICINE

11:15 – 11:30

Simeon Monov, Nikolay Pavlov, Andrey Nikolov, FINE TUNNING T5 MODEL FOR TEST EXAMINATION AND ASSESSMENT IN MUSIC EDUCATION FOR VISUALLY IMPAIRED STUDENTS

11:30 – 11:45

Simeon Monov, Nikolay Pavlov, Detelinka Trifonova, PRETRAINING AND VALIDATING T5 MODEL ON BULGARIAN DATA

11:45 – 12:00

Stanislav Dakov, Anna Malinova, ENHANCING THE E-COMMERCE EXPERIENCE: A WISHLIST BROWSER EXTENSION WITH PRICE-DETECTION

12:00 – 14:00

**LUNCH BREAK**

14:00 – 14:15

Todorka Terzieva, Angel Golev, THE DUECOS PROJECT – OBJECTIVES AND PLANNED RESULTS BY THE FMI TEAM AT PU

14:15 – 14:30

Dobrinka Boykina, THE PROJECT “BYOD-LEARNING”

14:30 – 14:45

Dobrinka Boykina, Zhelyazka Raikova, RESEARCH CENTER FOR INNOVATIONS IN EDUCATION AND SMART TECHNOLOGIES IN LEARNING

14:45 – 15:00

Sava Grozdev, Veselin Nenkov, Tatyana Madjarova, CONCERNING TWO SOLUTIONS OF ONE ASSIGNMENT FROM IMO 2023

- 15:00 – 15:15 Tsvetelina Zhelyazkova, USING A HEURISTIC APPROACH TO MATHEMATICAL WORD PROBLEM SOLVING IN 6 TH – 7 TH GRADE
- 15:15 – 15:30 Todorka Terzieva, Ventsislav Dilyanov, Asen Rahnev, MODELING OF LEARNING THROUGH APPLICATION OF PEDAGOGICAL INNOVATION
- 15:30 – 16:00 **BREAK**
- 16:00 – 16:15 Ivelina Velcheva, Ivan Dimitrov, Vera Shopova, EDUCATIONAL SCRATCH GAME RELATED TO THE SUBJECT OF MAN AND NATURE FOR 3TH GRADE
- 16:15 – 16:30 Vitali Atias, Angel Georgiev, BLOCKCHAIN TECHNOLOGY IN PEER-TO-PEER ENERGY TRADING
- 16:30 – 16:45 Veselina Naneva, Nikolay Pavlov, Kremena Stefanova, DEVELOPMENT OF ANIMATED DATA VISUALIZATIONS USING JAVASCRIPT BASED LIBRARIES
- 16:45 – 17:00 Rosen Hristev, Angel Urilski, IMPROVING THE SECURITY OF WEB SERVERS USED IN E-LEARNING SYSTEMS
- 17:00 – 17:15 Rosen Hristev, Magdalena Veselinova, Kristiyan Kolev, OPTIMIZING CLOUD INFRASTRUCTURE FOR EFFECTIVE DATA RECOVERY WITHOUT LOSS
- 17:15 – 17:30 Maria Dobрева, Andrey Nikolov, Nikolay Pavlov, APPLICATION AND DATA ACCESS SECURITY MODEL FOR DISTRIBUTED BUSINESS APPLICATIONS

## 01.12.2023 ► HALL B

- 9:00 – 9:15 Angel Golev, Valia Arnaudova, ON A MODIFIED ADAPTIVE HOPF-LIKE OSCILLATOR WITH A SUITABLE, USER-FIXED “INPUT FUNCTION OF COUPLING STRENGTH (IFCS)”
- 9:15 – 9:30 Anton Iliev, Nikolay Kyurkchiev, Asen Rahnev, Todorka Terzieva, A NOTE ON EXTENDED BASED ON GENERALIZED HARRIS ALGORITHM USING SGN FUNCTION
- 9:30 – 9:45 Maria Vasileva, Vesselin Kyurkchiev, Anna Malinova, Anton Iliev, Asen Rahnev, Nikolay Kyurkchiev, A LOOK AT THE ADAPTIVE HOPF OSCILLATORS: AN OVERVIEW (WEB PLATFORM UPGRADE)
- 9:45 – 10:00 Desislava Voynikova, MODELING OF PM10 AIR POLLUTION IN PLOVDIV USING REGRESSION TREES

10:00 – 10:15

Maya Stoeva, THE EVOLUTION OF DESIGN SYSTEMS AND PROTOTYPING TOOLS. CHANGES IN UI/UX TECHNIQUES

10:15 – 10:30

Vitali Atias, Katerina Atias, CONVERSATIONAL ARTIFICIAL INTELLIGENCE AND MENTAL HEALTH – APPLICATION AND CHALLENGES

10:30 – 10:45

Yanica Chukanska, Gergana Koleva, ADAPTIVE TOOLS FOR TEACHING NOTE DURATIONS TO VISUALLY IMPAIRED STUDENTS

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„ОК - Марков“ ЕООД  
София



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**2023**

### Clarification:

Hall A is the big conference hall on Floor 1.  
Hall B is the small conference hall on Floor 5 next to Lobby.