



**14<sup>th</sup> Conference of the Society of Physicists of Macedonia – CSPM 2022**  
**15-18 September 2022, Ohrid, Macedonia**  
**Congress Centre– Ohrid**

**Conference Program**

<b>15 September 2022 – Thursday</b>	
10:00-12:00	<b>REGISTRATION</b> (Registration desk will be also opened during the breaks)
12:15-12:30	<b>Conference Opening</b>
	CHAIRMAN Irina Petreska
12:30-13:15	<b>PT-01: Ralf Metzler</b> , <i>BEYOND BROWNIAN MOTION: FROM DATA TO MODELS</i>
13:15	<b>LUNCH BREAK</b>
	CHAIRMAN Trifce Sandev
14:45-15:15	<b>IT-01: Aleksei Chechkin</b> , <i>GAUSSIAN LONG-MEMORY RANDOM PROCESSES 80 YEARS AFTER KOLMOGOROV'S "WIENERSCHES SPIRALEN"</i>
15:15-15:35	<b>CT-01: Timo J. Doerries</b> , Aleksei V. Chechkin and Ralf Metzler, <i>APPARENT ANOMALOUS DIFFUSION AND NON-GAUSSIAN DISTRIBUTIONS IN A SIMPLE MOBILE-IMMOBILE TRANSPORT MODEL WITH POISSONIAN SWITCHING</i>
15:35-15:55	<b>CT-02: Costantino Di Bello</b> , Satya Majumdar, Alexander Hartmann, <i>MANY-PARTICLES DIFFUSING WITH RESETTING: STUDY OF THE LARGE-DEVIATION PROPERTIES OF THE FLUX DISTRIBUTION</i>
15:55-16:15	<b>CT-03: Marcus Dahlenburg</b> , Gianni Pagnini, <i>EXACT CALCULATION OF THE MEAN FIRST-PASSAGE TIME OF CONTINUOUS-TIME RANDOM WALKS BY NONHOMOGENEOUS WIENER-HOPF INTEGRAL EQUATIONS</i>
16:15-16:35	<b>CT-04: R. K. Singh</b> and Stanislav Burov, <i>DESCRIBING A CTRW: ONE BIG JUMP VS MANY SMALL JUMPS</i>
16:35	<b>COFFEE BREAK</b>
	CHAIRMAN Aleksei Chechkin
17:10-17:40	<b>IT-02: Francesco Mainardi</b> , <i>A MODEL IN LINEAR VISCOELASTICITY BASED ON THE EXTENDED JEFFREYS-LOMNITZ CREEP LAW</i>
17:40-18:00	<b>CT-05: Dušan Zorica</b> , Ljubica Oparnica, <i>ENERGY BALANCE FOR FRACTIONAL WAVE EQUATIONS</i>
18:00-18:20	<b>CT-06: Stevan Cvetičanin</b> , Dušan Zorica, <i>DISSIPATIVE AND GENERATIVE FRACTIONAL ELECTRIC ELEMENTS IN RLC CIRCUITS MODELING</i>
18:20-18:40	<b>CT-07: Yingjie Liang</b> , Wei Wang, Ralf Metzler, <i>SUBORDINATED FRACTIONAL BROWNIAN MOTION WITH DRIFT</i>
18:40-19:00	<b>CT-08: Guillermo Chacón-Acosta</b> , Mayra Núñez-López, <i>PATTERN FORMATION AND DIFFUSION-DRIVEN INSTABILITY IN NARROW ENVIRONMENTS</i>



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<b>16 September 2022 – Friday</b>	
	CHAIRMAN Aleksandar Skeparovski
9:15-10:00	<b>PT-02: Vlado Lazarov</b> , <i>MATERIALS MATTER: ROLE OF ELECTRON IMAGING AND SPECTROSCOPIES FOR NEXT GENERATION OF NANOMATERIALS</i>
10:00-10:30	<b>IT-03: Dijana Žilić</b> , <i>UNUSUAL MAGNETISM AND THERMOCHROMISM OF MONONUCLEAR IRON(III) COMPLEX</i>
10:30-10:50	<b>CT-09: Mimoza Naseska</b> , A. Bavec, E. Goreshnik, Z. Jagličić, D. Mihailović and T. Mertelj, <i>ULTRAFAST DYNAMICS OF THE DIFFERENT MAGNETIC PHASES IN CeSb</i>
10:50	<b>COFFEE BREAK</b>
	CHAIRMAN Gertrud Zwicknagl
11:30-12:00	<b>IT-04: Dragi Karevski</b> , <i>MEASUREMENTS-INDUCED QUANTUM PHASE TRANSITIONS</i>
12:00-12:20	<b>CT-10: Benjamin Walter</b> , Gabriele Peretto, Andrea Gambassi, <i>FIRST DETECTION TIMES OF N FREE FERMIONS UNDER PERIODIC PROJECTIVE MEASUREMENTS</i>
12:20-12:40	<b>CT-11: Vladimir Ohanesjan</b> , Koenraad Schalm, <i>SYK PLAYGROUND</i>
12:40-13:00	<b>CT-12: Viktor Urumov</b> , <i>ISING MODEL WITH CROSSING BONDS AND FOUR-SPIN INTERACTIONS</i>
13:00	<b>LUNCH BREAK</b>
	CHAIRMAN Viktor Urumov
14:30-15:00	<b>IT-05: Jaan Kalda</b> , <i>UNIVERSAL LAW FOR DISTRIBUTION OF RECORDS: FROM SPORTS TO SCIENCE OLYMPIADS</i>
<b>15:30-19:00 GUIDED TOUR</b>	
<b>20:00-00:00 GALA DINNER (Congress Centre - Ohrid)</b>	



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17 September 2022 – Saturday		
	CHAIRMAN Suzana Topuzoski	
9:15-10:00	<b>PT-03: Clemens Heitzinger</b> , <i>REINFORCEMENT LEARNING FOR HIGHLY SENSITIVE DETECTORS FOR LIGHT DARK MATTER</i> (online)	<b>Parallel session - EDU</b> , CHAIRMAN Lambe Barandovski <b>9:15-9:35 EDU-01: Barbara Rovšek</b> , <i>EXPERIMENTAL PROBLEMS AT SLOVENIAN NATIONAL PHYSICS COMPETITION</i>
10:00-10:30	<b>IT-07: Angels Ramos</b> , <i>STRANGENESS NUCLEAR PHYSICS: FROM HYPERNUCLEI TO NEUTRON STARS</i>	<b>9:35-9:55 EDU-02: Jurij Bajc</b> , Brina Posinek, Saša Ziherl, <i>COMBINING THE RESULTS OF PHYSICS COMPETITIONS AND NATIONAL ASSESSMENTS OF KNOWLEDGE OF PHYSICS IN SLOVENIA</i>
10:30-10:50	<b>CT-14: Sara Gjorgievska, Hristijan Kochankovski</b> , <i>THERMODYNAMIC PROPERTIES OF HOT NUCLEAR MATTER</i>	<b>9:55-10:15 EDU-03: Oliver Zajkov</b> , Jana Bogdanoska, Andrijana Gjoreska, <i>TIMSS VS MACEDONIAN PHYSICS CURRICULUM</i>
10:50	COFFEE BREAK	
	CHAIRMAN Danica Krstovska	
11:20-12:05	<b>PT-04: Pavel Grigoriev</b> , <i>ANISOTROPIC SUPERCONDUCTING TRANSITION IN LAYERED METALS</i> (online)	
12:15-12:45	<b>IT-08: Tatjana Vuković</b> , <i>QUASI-ONE-DIMENSIONAL OBSTRUCTED ATOMIC INSULATORS</i>	<b>Parallel session - CHAIRMAN Boce Mitrevski</b> <b>12:15-12:35 EDU-05: Karolina Dvojković, Vedran Žadanj</b> , <i>CHANGE OF TEACHING AND LEARNING THROUGH BERNOULLI'S PRINCIPLE</i>
12:45-13:15	<b>IT-09: Vladimir Arsoski</b> , <i>TOPOLOGICAL-LIKE STATES IN NANORIBBONS INDUCED BY AN ELECTRIC FIELD</i>	<b>12:35-12:55 EDU-06: Darko Radovancević</b> , Ljubisa Nesić, <i>BAROMETRIC FORMULA FOR NON-ISOTHERMAL TROPOSPHERE</i>
13:15-13:35	<b>CT-15: Danica Krstovska, Aleksandar Skeparovski, Milan Gjorgjevski</b> , <i>SURFACE ELECTRONIC STATES IN ORGANIC CONDUCTORS IN OUT-OF-PLANE MAGNETIC FIELD</i>	<b>12:55-13:15 EDU-07: Stojan Manolev</b> , <i>COMPUTERIZED DEMONSTRATIONS OF THE IDEAL GAS LAWS</i>
13:35	LUNCH BREAK	
	CHAIRMAN Guillermo Chacón-Acosta	
15:00-15:30	<b>IT-06: Suzana Topuzoski</b> , <i>GENERATION OF MULTIPLE-VORTEX BEAMS FROM COSINE-LAGUERRE-GAUSSIAN MODES</i>	
15:30-15:50	<b>CT-13: Ognjen Kapetanovski</b> , Irina Petreska, <i>NUMERICAL SOLUTION OF THE TIME-DEPENDENT SCHRÖDINGER EQUATION UNDER GEOMETRIC CONSTRAINTS</i>	
16:15-18:00	POSTER SESSION	



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<b>18 September 2022 – Sunday</b>	
	CHAIRMAN Lambe Barandovski
9:15-9:45	<b>IT-10: Inga Zinicovskaia</b> , <i>NUCLEAR AND RELATED ANALYTICAL TECHNIQUES IN ENVIRONMENTAL STUDIES</i>
9:45-10:05	<b>CT-16: Manjit Dosanjh</b> , Vesna Gersan, Petya Georgieva, <b>Mimoza Ristova</b> , <i>CANCER TREATMENT WITH RADIATION THERAPY (CONVENTIONAL AND PARTICLE) IN THE COUNTRIES OF SOUTHEAST EUROPE AND PERSPECTIVES OF SEEIIST</i>
10:05-10:25	<b>CT-17: Irena Sazdova Danova</b> , Vesna Gershan, Mimoza Ristova, Jasminka Chabukovska Radulovska, Goran Spirov, Zoran Dimitrov, <i>EXAMINATION OF PARAMETERS INFLUENCING THE IMAGE QUALITY AND PATIENTS' DOSES DURING COMPUTER TOMOGRAPHY IMAGING METHOD AND DETERMINATION OF DIAGNOSTIC REFERENCE LEVELS</i>
10:25-10:45	<b>CT-18: Neset Izairi</b> , Mimoza Ristova, Maja Skenderovska, Fadil Ajredini, Shefket Dehari, Muhamed Shehabi, Redona Bexheti, <i>MONITORING AND ANALYSIS OF PM<sub>2.5</sub> AND PM<sub>10</sub> PARTICLES AS AIR POLLUTANTS IN THE CITY OF TETOVO</i>
10:45	<b>COFFEE BREAK</b>
11:20-11:40	<b>CT-19: Nedim Sladić</b> , Vlado Spiridonov, Mladen Ćurić, Boro Jakimovski, <i>APPLICATION OF THE NOVEL THUNDERSTORM ALERT SYSTEM (NOTHAS) IN DETECTION AND NOWCASTING OF CATASTROPHIC FLOODING CASE IN MACEDONIA</i>
11:40-12:00	<b>CT-20: Katerina Drogreshka</b> , Ljubcho Jovanov, Jasmina Najdovska, Dragana Chernih, <i>SOURCE MECHANISM AND SOURCE PARAMETERS OF SEPTEMBER 1, 1994 EARTHQUAKE, BITOLA</i>
12:00-12:20	<b>CT-21: Riste Popeski-Dimovski</b> , Ognen Tuteski, Arta Veliu, <i>EVALUATION OF THE CHANGES IN MECHANICAL PROPERTIES OF 3D PRINTED PARTS RESULTING IN VARIATION OF BASIC 3D PRINTING PARAMETERS</i>
12:20 -	Closing/Lunch/Farewell



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**LIST OF POSTERS**

**PP-01: Saša Dmitrović**, Hana Schiff, Tatjana Vuković, BAND COREPRESENTATIONS AND TOPOLOGICAL PHASES FOR QUASI-ONE-DIMENSIONAL MAGNETIC STRUCTURES

**PP-02: Nenad Milojević**, Milan Jocić, Danilo Delibašić, Ivan Mančev, DIFFERENTIAL CROSS SECTIONS FOR SINGLE ELECTRON CAPTURE IN FAST p – He COLLISIONS

**PP-03: Zoran S. Marković**, Dejan Milenković, Dušica Simijonović, Dušan Dimić, Edina Avdović, SPECTROSCOPIC CHARACTERIZATION (NUCLEAR MAGNETIC RESONANCE AND INFRARED) AND QUANTUM MECHANICAL STUDIES OF 5-(4-HYDROXY-3-METHOXYBENZYLIDENE)PYRIMIDINE-2,4,6(1H,3H,5H)-TRIONE

**PP-04: Ljubica Dimova**, Irina Petreska, DFT CALCULATIONS OF THE MOLECULAR MAGNETIC PROPERTIES VIA A SIMPLE EXAMPLE OF THE NITROGEN MONOXIDE MOLECULE

**PP-05: Marko Antonijević**, Žiko Milanović, Dušica Simijonović, Jelena Đorović Jovanović, Zoran Marković, APPLICATION OF DENSITY FUNCTIONAL THEORY FOR STRUCTURAL AND QUANTUM CHEMICAL INVESTIGATION OF COUMARIN-HYDROXYBENZO-HYDRAZIDE HYBRIDS

**PP-06: Žiko Milanović**, Marko Antonijević, Edina Avdović, Dejan Milenković, Zoran Marković, TIME DEPENDENT DENSITY FUNCTIONAL THEORY SIMULATION OF THE UV-VIS ABSORPTION SPECTRA OF 4,7-DIHYDROXYCOUMARIN DERIVATIVES

**PP-07: Pece Trajanovski**, Trifce Sandev, Ljupco Kocarev, GENERALIZED FOKKER-PLANCK EQUATION: RANDOM SEARCH AND STOCHASTIC RESETTING

**PP-08: Pece Trajanovski**, Petar Jolakoski, Kiril Zelenkovski, Trifce Sandev, Alexander Iomin, Ljupco Kocarev, ORNSTEIN-UHLENBECK PROCESS AND ITS GENERALIZATIONS

**PP-09: Kiril Zelenkovski**, Trifce Sandev, Ljupco Kocarev, Lasko Basnarkov, RANDOM WALK ON NETWORKS WITH POSITION-BASED STOCHASTIC RESETTING

**PP-10: Petar Jolakoski**, Viktor Stojkoski, Arnab Pal, Trifce Sandev, Ljupco Kocarev, Ralf Metzler, NON-ERGODICITY AND FIRST PASSAGE DYNAMICS IN ECONOMICS

**PP-11: Alexander Dubkov**, Nikolay Agudov, CONSTRUCTION OF CORRECT LANGEVIN EQUATION FOR ELECTRIC CIRCUIT WITH MEMRISTOR, TAKING INTO ACCOUNT THERMAL NOISE (cancelled)

**PP-12: Quing Wei**, FRACTIONAL ANOMALOUS DIFFUSION AND NON-DARCIAN FLOW IN GEOLOGICAL SYSTEM (cancelled)



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**PP-13: Viktor Urumov**, COUNTRY RANKINGS IN SCIENCE

**PP-14: Stefan T. Todorov**, Lidia T. Popova, APPLICATION OF THE ENERGY SPECTRUM METHOD IN RESEARCH WATER RESOURCES FROM THE RILA MOUNTAIN

**PP-15: Mimoza Ristova**, VISUAL SPECTROSCOPY AS A TOOL FOR INK IDENTIFICATION FROM A QUESTIONED DOCUMENT

**PP-16: Riste Popeski-Dimovski**, Verica Mitreva, Nedjat Murikj, 3D PRINTED MATRICES AS STRUCTURES FOR BALLISTICS PROTECTION

**PP-17: Ljubcho Jovanov**, Katerina Drogreshka, Dragan Radivojević, Vera Zoroska, INTERPRETATION OF AN EARTHQUAKE AS FREE OSCILLATION

Posters - Physics education

**PP-EDU-01: Nenad Milojević**, Dragan Radivojević, Saša Rančev, Dragana Milosavljević, Marija Stojanović-Krasić, Slavica Jovanović, THE PARADOX OF THE ROD

**PP-EDU-02: Lazar Radenković**, Ljubiša Nesić, FIRST STEPS IN DEVELOPING FRICTION CONCEPT INVENTORY

**PP-EDU-03: Jovica Milisavljević, Sladjana Nikolić**, DENDROCLIMATOLOGY– AN EXAMPLE OF PROJECT-BASED LEARNING IN HIGH SCHOOLS (GLOBAL WARMING AND LOCAL EVIDENCE)

**PP-EDU-04: Ivana Krulj**, AN APPROACH TO STUDYING RESISTANCE IN AN ALTERNATING CURRENT CIRCUIT

**PP-EDU-05: Karolina Dvojčević**, Vedran Žadanj, THE PHYSICAL NATURE OF MUSIC AND MUSICAL INSTRUMENTS

**PP-EDU-06: Mihail Naumovski**, Viktorija Marcevska, Mihaela Neshkoska, Elena Markovska, THE IMPACT OF ECO-INSULATION MATERIALS ON THE ENVIRONMENT AT ITS SUSTAINABLE POINT