

SCIENTIFIC PROGRAMME

28 June 2022 Tuesday

Registration 09:00 – 10:00

Morning Section-I 10:00 – 11:00 (Hall-1: Yahya KEMAL Hall)

Chair: Mahmut BÖYÜKATA (Kırıkkale University, Türkiye)

10:00-11:00 Opening Ceremony

11:00-11:30 Conference Photo + Coffee Break

Morning Section-II 11:30 – 12:50 (Hall-1: Yahya KEMAL Hall)

Chair: Necla ÇAKMAK (Karabük University, Türkiye)

11:30-11:55 Sefa ERTURK (Niğde Ömer Halisdemir University, Türkiye)

Recent developments in SPECT and PET medical imaging systems

11:55-12:20 Hatice DURAN YILDIZ (Institute of Technology Accelerator, Ankara Univ., Türkiye)

Beam dynamic studies at SRF accelerator system for free electron laser and ATLAS experiment ADCoS duties at CERN

12:20-12:35 Haris DAPO (Turkish Accelerator and Radiation Laboratory, Ankara University, Türkiye)

Design and initial results of the experiment for proton cross-section measurement with stacked-foil technique

12:35-12:50 Özgür ETİŞKEN (Kırıkkale University, Türkiye)

Designing a particle accelerator for the future: FCC-e+e-injector complex design

12:50-14:15 LUNCH

Afternoon Section-I 14:15 – 15:30 (Hall-1: Yahya KEMAL Hall)

Chair: Andrew BOSTON (Liverpool University, Liverpool, England)

14:15-14:40 José M. ARIAS (Sevilla University, Sevilla, Spain)

Quantum simulation of the Agassi model in trapped ions

14:40-15:05 Sabin STOICA (International Centre for Advanced Training and Research in Physics (CIFRA), Romania)

Challenges in the study of double-beta decay

15:05-15:30 Jameel-Un NABI [ON-LINE] (Wah University, Punjab, Pakistan)

Updated status of key nuclei for presupernova evolution

15:30-15:55 Coffee Break + (Opening Ceremony of Prof. Dr. İhsan ULUER Hall)

Afternoon Section-II 15:55–17:10

	Hall-1: Yahya KEMAL Hall Chair: Kaan MANISA (Kütahya Dumlupınar Un., Türkiye)	Hall-2: İhsan ULUER Hall Chair: Bayram DEMİR (İstanbul Univ., Türkiye)
15:55-16:10	Samira BAID (Cadi Ayyad Un., Marrakech, Morocco) Collective motion in γ-unstable nuclei within energy-dependent Davidson potential and deformation dependent mass formalisms	Duygu TUNÇMAN (İstanbul Univ.-Cerrahpaşa, Türkiye) Hounsfield unit (HU) comparison of different materials produced by plastic injection molding method with commercial bolus
16:10-16:25	Robert POENARU (Horia Hulubei Nat. Ins., IFIN-HH, Romania) Evaluation of the wobbling motion in even-even nuclei within a Simple Rotor Model	Duygu TUNÇMAN (İstanbul Univ.-Cerrahpaşa, Türkiye) Investigation of the effect of the patient cover materials on surface and build-up region doses
16:25-16:40	Hasan BİRCAN (Kütahya Dumlupınar Univ., Türkiye) Seyler-blanchard effective interaction calculations for nuclear matter	Menekşe ŞENYİĞİT (Ankara Univ., Türkiye) Developing a novel dosimeter system used in radiotherapy
16:40-16:55	Aysel ÖZFİDAN (Tarsus Univ., Türkiye) Lightest pseudo-mirror nuclei in the nuclear chart	Özgür ETİŞKEN (Kırıkkale Univ., Türkiye) A Proposal for Kırıkkale-2053 Vision: Hadron Therapy Center
16:55-17:10	Serkan AKKOYUN (Sivas Cumhuriyet Univ., Türkiye) Determination of the shell model single particle energies by using machine learning methods	Adem PEHLİVANLI (Kırıkkale Univ., Türkiye) Calculation of secondary neutron spectrum and additive dose in a water phantom of 135 MeV/u carbon ion beam by Monte Carlo method

17:10-17:25 Break

SCIENTIFIC PROGRAMME

Afternoon Section-III 17:25–18:25

	Hall-1: Yahya KEMAL Hall Chair: Tuncay BAYRAM (Karadeniz Tech. Un., Türkiye)	Hall-2: İhsan ULUER Hall Chair: A. Güneş TANIR (Gazi Univ., Ankara, Türkiye)
17:25-17:40	Khusniddin OLIMOV (Physical-Technical Ins. of Uzbekistan) Analysis of midrapidity transverse momentum distributions of identified charged particles in Pb+Pb collisions at $(S_{nn})^{1/2}=5.02$ TeV using non-extensive Tsallis	İsmail Hakkı SARPÜN (Akdeniz Univ., Antalya, Türkiye) Investigation of alpha optical model potential effects on $^{165}\text{Ho}(a,xn)$ reaction cross section
17:40-17:55	Khusniddin OLIMOV (Physical-Technical Ins. of Uzbekistan) Study of midrapidity transverse momentum spectra of the charged pions and kaons, (anti-)protons in Xe+Xe collisions at $(S_{nn})^{1/2}=5.44$ TeV using Tsallis distribution with embedded transverse flow	Ünal YILDIRIR (Akdeniz Univ., Antalya, Türkiye) Effects of level density models on $^{165}\text{Ho}(a,xn)$ reaction cross section
17:55-18:10	Kosim OLIMOV (Physical-Technical Ins. of Uzbekistan) Observation of $pp\pi^+$ resonance state in $^{12}\text{C}+^{12}\text{C}$ collisions at 3.37 A GeV	Aydoğan DOĞAN (Osmaniye Korkut Ata Univ., Türkiye) Nucleonic odd-even effects for $(n,2n)$ reaction cross sections at 14-15 MeV
18:10-18:25	Hamide AVCI (Selçuk Univ., Konya, Türkiye) Isotopic distributions in relativistic heavy-ion collisions	Ferhan AKDENİZ (Akdeniz Univ., Antalya, Türkiye) Nucleon densities of samarium isotopes calculated by Skyrme and Gogny models

SECOND DAY'S PROGRAMME

29 June 2022 Wednesday

Morning Section-I 09:30 – 10:45 (Hall-1: Yahya KEMAL Hall)

Chair: Sefa ERTURK (Niğde Ömer Halisdemir University, Türkiye)

- 09:30-09:50 **Serdar ÜNLÜ** (Burdur Mehmet Akif Ersoy University, Türkiye)
Allowed and forbidden contributions to two-neutrino double beta decay process
- 09:50-10:15 **Dennis BONATSOS [ON-LINE]** (Institute of Nuclear and Particle Physics, NCSR, Greece)
Islands of shape coexistence
- 10:15-10:30 **Nihal BÜYÜKÇİZMECİ** (Selçuk Uni., Konya, Türkiye & Ins. Theo. Phys., J.W. Goethe Uni., Frankfurt, Germany)
A pioneer approach for nuclei formation in relativistic ion collisions
- 10:30-10:45 **Mohammadreza HADIZADEH** (Central State University, Wilberforce, Ohio, USA)
Relativistic three-body bound states in momentum space+

10:45-11:30 Coffee Break + POSTER Section

Morning Section-II 11:30 – 12:50 (Hall-1: Yahya KEMAL Hall)

Chair: José M. ARIAS (Sevilla University, Sevilla, Spain)

- 11:30-11:55 **Andrew BOSTON** (Liverpool University, Liverpool, England)
The AGATA Spectrometer
- 11:55-12:20 **Francesco CAPPUZZELLO** (Catania University, Italy)
Heavy-ion induced direct reactions in view of the NUMEN project: a multi-channel approach
- 12:20-12:35 **Manuela CAVALLARO** (INFN - LNS, Laboratori Nazionali del Sud, Catania, Italy)
Upgrade of the MAGNEX magnetic spectrometer toward the high-intensity beams at INFN-LNS
- 12:35-12:50 **Aliya NURMUKHANBETOVA** (Energetic Cosmos Lab., Nazarbayev University, Kazakhstan)
Study of resonant reactions at Nur-Sultan DC-60 cyclotron

12:50-14:15 LUNCH

SCIENTIFIC PROGRAMME

Afternoon Section-I 14:15 – 15:20 (Hall-1: Yahya KEMAL Hall)

Chair: Hatice DURAN YILDIZ (Institute of Technology Accelerator, Ankara Univ., Türkiye)

- 14:15-14:35 **Hasan GÜMÜŞ** (Ondokuz Mayıs University, Samsun, Türkiye)
The concept of effective charge and electronic energy loss calculations for intermediate energy electrons and positrons
- 14:35-14:50 **Tuncay BAYRAM** (Karadeniz Techninal University, Türkiye)
Decay modes and half-life of some Ds isotopes
- 14:50-15:05 **Tayfun AKYÜREK** (Marmara University, İstanbul, Türkiye)
Characterization of different reactor parameters of TRIGA Mark II, PWR and VVER under various conditions
- 15:05-15:20 **Selçuk BİLMİŞ** (Middle East Technical University, Ankara, Türkiye)
Mass and decay constants of radially excited heavy mesons in QCD sum rule

15:20-15:55 Coffee Break + POSTER Section

Afternoon Section-II 15:55–17:10

	Hall-1: Yahya KEMAL Hall Chair: Serkan AKKOYUN (Sivas Cumhuriyet U., Türkiye)	Hall-2: İhsan ULUER Hall Chair: M. Nureddin TÜRKAN (İstanbul Med. U., Türkiye)
15:55-16:10	Faruk YAŞA (Kahramanmaraş Sütçüimam Univ., Türkiye) An overview of a new neutron scattering function in a nuclear reactor	Huseynqulu QULIYEV (Nat. Aviation Acad. of Azerbaijan) Investigation of low-lying dipole excitations in doubly even $^{124-130}\text{Xe}$ isotopes
16:10-16:25	Rezvan REZAEIZADEH (Guilan University, Iran) Analysis of D-T nuclear fuel depletion in advanced fussion reactor of approximate method	Gamze HOŞGÖR (Sakarya University, Türkiye) Calculation of the electric dipole (E1) resonance in ^{167}Er from threshold to 22 MeV
16:25-16:40	Aybaba HANÇERLİOĞULLARI (Kastamonu Un., Türkiye) Evaluation the knowledge and radiation protection of radiation workers of Ibensina hospital	Elif KEMAH (Sakarya University, Türkiye) Theoretical study of the Giant dipole resonance in the ^{233}Th nucleus
16:40-16:55	Aybaba HANÇERLİOĞULLARI (Kastamonu Un., Türkiye) Radiogenic heat generation analysis of fly ashes collected from Turkish coal-burning thermal power plants	Olca GÜRBÜZ (Gazi Univ., Ankara, Türkiye) The investigation of electromagnetic transition properties of even-even $^{108-114}\text{Cd}$ isotopes by the framework of IBM
16:55-17:10	Pınar ÇİFTÇİ (Sivas Cumhuriyet Univ., Türkiye) Exergy analysis of U-Tube and VVER's horizontal steam generators	Dilara İÇKECAN (Marmara Univ., İstanbul Türkiye) Comparing the shielding features of graphene with impregnated activated carbon for gamma-rays

17:10-17:25 Break

Afternoon Section-III 17:25–18:25

	Hall-1: Yahya KEMAL Hall Chair: Mohammadreza HADIZADEH (Cent. State U., Ohio, USA)	Hall-2: İhsan ULUER Hall Chair: Serdar ÜNLÜ (Burdur Mehmet Akif Ersoy U., Türkiye)
17:25-17:40	Khalid Hadi Mahdi Aaal-SHABEED (Baghdad Univ., Iraq) Radon concentration and its indices in Bulak cave Safranbolu town/Türkiye	Şule KARATEPE ÇELİK (Bitlis Eren Univ., Türkiye) CDCC calculation of elastic scattering of ^8Li on different targets
17:40-17:55	Cevad SELAM (Muş Alparslan Univ., Türkiye) First forbidden transitions by a self-consistent model in odd mass nuclei	Şadiye ÇAKMAK (Osmangazi Univ., Eskişehir, Türkiye) Gamow-Teller transitions for even-even nuclei of zinc isotopes by using pn-QRPA
17:55-18:10	Neçla ÇAKMAK (Karabük Univ., Türkiye) Rank 1 first forbidden transition in Hg-194 isotope	Nuray YAVUZKANAT (Bitlis Eren University, Türkiye) Finding gamma shielding properties of $\text{Li}_2\text{Br}_4\text{O}_7$ (Lithium Borate) based glasses in GATE simulation
18:10-18:25	Rifat SOYLU (Gaziantep Univ., Türkiye) Anisotropy effect in prompt fission neutron spectrum (PFNS)	Nuri YORULMAZ (Harran Univ., Urfa, Türkiye) Determination of photon radiation shielding properties of some boron doped glass materials using MCNP6 and calculation of removal cross section values

SCIENTIFIC PROGRAMME

THIRD DAY'S PROGRAMME

30 June 2022 Thursday

Morning Section-I 09:30 – 11:05 (Hall-1: Yahya KEMAL Hall)

Chair: Aybaba HANÇERLİOĞULLARI (Kastamonu Univ., Türkiye)

- 09:30-09:55 **Takehiko R. SAITO [ON-LINE]** (High Energy Nuclear Physics Laboratory, RIKEN Japan)
Solving puzzles of light hypernuclei by using heavy ion beams, nuclear emulsions and machine learning
- 09:55-10:20 **Muhsin N. HARAKEY [ON-LINE]** (Groningen University, Groningen, Netherlands)
Nuclear compression modes from stable to exotic nuclei
- 10:20-10:35 **Murat DAĞ** (Kırşehir Ahi Evran University, Türkiye)
Study of the effects of nuclear level density parameters on the cross sections for elements with $Z \geq 90$
- 10:35-10:50 **Hüseyin DÖNMEZ** (Aksaray University, Türkiye)
Calculations of (n,p) reaction cross sections for $^{180,182,183,184,186}\text{W}$ isotopes
- 10:50-11:05 **Hüseyin DÖNMEZ** (Aksaray University, Türkiye)
Investigation of empirical systematics for cross sections at 17.9 MeV

11:05-11:30 Coffee Break

Morning Section-II 11:30 – 13:05 (Hall-1: Yahya KEMAL Hall)

Chair: Murat DAĞ (Kırşehir Ahi Evran Univ., Türkiye)

- 11:30-11:55 **Yu ZHANG [ON-LINE]** (Liaoning Normal University, China)
Effects of single particle on shape phase transitions in odd-even systems
- 11:55-12:20 **Valentin Olegovich NESTERENKO [ON-LINE]** (Joint Institute for Nuclear Research, Dubna, Russia)
Low-energy M1 states in deformed nuclei: spin scissors or spin-flip?
- 12:20-12:35 **Mereigul TEZEKBAYEVA** (Joint Institute for Nuclear Research, Dubna, Russia)
Detailed study of radioactive decay properties of nobelium isotopes with α , β , γ -spectroscopy method
- 12:35-12:50 **Nataliia KURKOVA** (Joint Institute for Nuclear Research, Dubna, Russia)
Theoretical study of the competition of quasi-fission and fusion-fission processes in the reactions leading to formation of new superheavy nuclei in the framework of the dynamical model
- 12:50-13:05 **Roman MUKHIN** (Joint Institute for Nuclear Research, Dubna, Russia)
The study of multiplicity distributions for prompt neutrons emitted in spontaneous fission of transfermium isotopes

13:05-14:15 LUNCH

Afternoon Section-I 14:15 – 15:00 (Hall-1: Yahya KEMAL Hall)

	Hall-1: Yahya KEMAL Hall Chair: Hasan GÜMÜŞ (Ondokuz Mayıs U., Samsun, Türkiye)	Hall-2: İhsan ULUER Hall Chair: Aynur ÖZCAN (Gazi Univ., Ankara, Türkiye)
14:15-14:30	Zeynep YÜKSEL (Ondokuz Mayıs Un., Samsun, Türkiye) Energy loss and depth dose calculations in gonad tissues for electron radiation	Ali Zafer BOZKIR (Kırıkkale Univ., Türkiye) The criticality problem for the pure quadratic anisotropic scattering with the FN method
14:30-14:45	Bayram BİLMEZ (Ondokuz Mayıs Un., Samsun, Türkiye) Investigation of stopping power and range values as a TLD parameter	İpek BALNAN (Yıldız Tech. Un., İstanbul, Türkiye) Neutron flux characterization of a 2 Ci Am-Be neutron source irradiation cell
14:45-15:00	Şule OCAK ARAZ (Kırıkkale Univ., Türkiye) Determination of γ -radiation shielding properties of metal boride coated AISI 304L stainless steel	Melek Gülnur SAMUR (Yıldız Tech. Un., İstanbul, Türkiye) Coating of boron oxide thin films

15:00-15:15 Coffee Break

Afternoon Section-II 15:15–16:30 (Hall-1: Yahya KEMAL Hall)

Chair: Abdullah AYDIN (Kırıkkale University, Türkiye)

- 15:15-16:15 **PANEL: Mustafa BÖYÜKATA** (Yozgat Bozok University, Türkiye)
Project Design Techniques for TUBITAK Programs
- 16:15-16:30 **Closing Ceremony:**
Award Ceremony for Graduates with Honors (In Faculty)

16:30-16:35 Break

Afternoon Section-III 16:35–16:50 (Hall-1: Yahya KEMAL Hall)

16:35-16:50 **NSP2022 Closing Remarks & NSP2023 Decision on next year**

ACCEPTED POSTERS

	Name / Surname	Affiliation	Tentative Abstract Title
1	Abdullah KAPLAN	Süleyman Demirel University, Türkiye	Effects of Deuteron and Alpha Optical Model Potentials on the Production Cross-Section Calculations of Some Radiobromine Isotopes
2	Ahmed Najib Ali ALSAUDI	Bursa Uludağ University University, Bursa, Türkiye	Production of Vector Leptoquarks at FCC Based γp Collider
3	Anes HAYDER	Karadeniz Technical University, Trabzon, Türkiye	Simulating the Effect of Activity and Volume of Radioisotope on a Gamma Camera's Performance
4	Büşra PINAR	Bursa Uludağ University, Bursa, Türkiye	Production of Vector Leptoquarks at FCC Based μp Collider
5	Eda MUTLU	Istanbul University, İstanbul, Türkiye	Investigation of Centering Problem in the Cadmium Zinc Telluride (CZT) Cardiac Camera
6	Ekin DURSUN	Karabük University, Türkiye	Fermi Transition Logft Values for V-46 and Cr-46 isotopes
7	Esra KURT	Gazi University, Sciences Faculty, Türkiye	The Discussions on the Atomic Structures of Two Newly-Synthesized Boron Compounds; Stated as the New Radiation Shielding materials
8	Eyyup TEL	Osmaniye Korkut Ata University, Türkiye	Investigation of Production Reactions Cross Sections of ^{64}Cu Radionuclide Using in Nuclear Medicine
9			Neutron Emission Cross-Section Calculations of Production of ^{44}Sc , ^{62}Cu , ^{72}As , ^{89}Zr , ^{117}Te , ^{119}Te and ^{124}I Medical Radioisotopes with Alpha Beams
10	Fatima BENRACHI	LPMPs Laboratory, Frères Mentouri Constantine 1 University, Constantine, Algeria	Double Beta Decay Calculations of ^{46}Ca Nucleus
11	Fatima Zohra CHEMINGUI	LPMPs Laboratory, Frères Mentouri Constantine 1 University, Constantine, Algeria	Dosimetric Study of Heterogeneity in Lung Cancer with RX Radiotherapy Treatment
12	Gülper AKSOY	Gazi University, Ankara, Türkiye	Determination of Front and Side Dead Layer Thickness of a p-type HPGe Detector by MC
13	Hakan YAKUT	Sakarya University, Sakarya, Türkiye	General Calibration Procedures for the NaI(Tl) Detector and their Application to Natural Radioactivity Measurements
14	Hasan ÖZDOĞAN	Antalya Bilim University, Antalya, Türkiye	Photonuclear Reaction Cross-Section Calculations of Sn Isotopes
15	Huseynqulu QULIYEV	National Aviation Academy of Azerbaijan, Baku, Azerbaijan	The electric Dipole Response of even-even $^{160,162}\text{Dy}$ Isotope
16	İsmail ANATÜRK	Ankara Yıldırım Beyazıt University, Ankara Türkiye	Comparison of PTV and Critical Organ Doses of AAA, AXB and MC Algorithms used in Lung Stereotactic Body Radiotherapy
17	Kosim OLIMOV	Physical-Technical Institute of Uzbekistan Academy of Sciences, Chingiz Aytmatov st. Tashkent, Uzbekistan	Characteristics of Secondary Particles Associated with The Leading Protons in N^{12}c and P^{12}c Collisions at 3.37 GeV incident Energy

ACCEPTED POSTERS

18	Mehmet DAĞ	Karabük University, Türkiye	Gamow-Teller Beta Decay Logft Value for P-32 Isotope
19	Mehmet DURGUT	Bursa Uludağ University, Bursa, Türkiye	Resonance Production of Scalar Leptoquarks at FCC Based ep Collider
20	Mirac KAMIŞOĞLU	Bandırma Onyedli Eylül University, Balıkesir, Türkiye	Assessment of the Radiation Protection Performance of some Boron-Doped Component with SRIM and Monte Carlo Simulations Code
21	Murat OKUTAN	Istanbul University - Cerrahpaşa, İstanbul, Türkiye	Comparison of Full and Half VMAT Treatment Plans for 6 MV Photon Beams in Lung SBRT
22			Energy Modulated Treatment Plan Optimization for Lung SBRT
23	Nadjet LAOUET	LPMPs Laboratory, Frères Mentouri Constantine-1 University, Constantine, Algeria	Spectroscopic Properties of A=96 Proton Rich Systems
24	Najm Abdullah SALEH	Karabük University, Türkiye	U1F Transition Logft Value for I-124 Isotopn-QRPA
25	Öznur SARIBAŞ	Bursa Uludağ University, Bursa, Türkiye	A Retrospective Dosimetric Comparison of Volumetric Arc Therapy (Vmat) and Intensity Adjustable Radiotherapy (Imrt) Plans of Patients Receiving Whole-Brain Radiotherapy with Hippocampus Sparing
26			Comparison of Sbrt Virtual Treatment Plans Obtained with Different Collimators in the Cyberknife System in Partial Breast Irradiation: A Retrospective Study
27	Selda GÜÇLÜ SARI	Ankara Yıldırım Beyazıt University, Ankara, Türkiye	Research of Optically Induced Luminescence (OSL) Properties of Thin Film PVP / Boron Compounds
28	Şevki ŞENTÜRK	Karadeniz Technical University, Trabzon, Türkiye	Production Cross-Section and Reaction yield of ^{76}Br for $^{nat}\text{Se}(p,xn)^{76}\text{Br}$ Reaction Channels
29	Timur ZHOLDYBAYEV	Institute of Nuclear Physics, Almaty, Kazakhstan	Continuous Spectrum of Protons and Alphas from Reaction Initiated by Protons of 22 MeV on ^{59}Co Nucleus
30	Tuğçe GÜLÜMSER	Süleyman Demirel University, Türkiye	Cross-Section Calculations of Medical Radioisotope ^{64}Cu for (p,x), (n,x) and (d,x) Reactions Production Cross-Section Calculations of Some Radiobromine Isotopes
31	Waleed Khalid M. ALSFOOK	Selçuk University, Konya, Türkiye	Radiation Measurements With Ring Dosimeters
32	Yeşim ŞAHİN	Kırıkkale University, Türkiye	Investigation of even-even Ti and Fe isotopes within IBM-1
33	Yiğit Ali ÜNCÜ	Akdeniz University, Antalya, Türkiye	Estimations of (n, α) Reaction Cross Sections using Bayesian Classifier
34	Zahra Jahangiri TAZEKAND	University of Tabriz, Tabriz, Iran	Description of 2_3^+ , 4 Intruder States in ^{130}Xe Nucleus by Mixing of Transitional Hamiltonian and O(6) Casimir Operator
35			Extension of 2p-2h Excitation Together Transitional Hamiltonian in Description of Intruder Levels of ^{118}Cd