

Conference Programme

XXIV International School on Nuclear Physics, Neutron Physics and Applications

13–18 September 2026, Nessebar, Bulgaria

Day 1: Sunday, 13 September 2026

10:00–17:00 Registration

Day 2: Monday, 14 September 2026

9:00–9:30 CONFERENCE OPENING SESSION

11:00–12:05 **Session 1**

Chairperson: Dimitar Tonev

09:30–10:00 **Giacomo de Angelis**

EXOTIC STRUCTURES AND DOUBLE-MAGICITY AT THE EDGE OF STABILITY

National Institute for Nuclear Physics (INFN)–Legnaro National Laboratories, Legnaro, Italy

10:00–10:30 **Gilles De France**

STUDIES OF ISOSCALAR PAIRING AT GANIL

GANIL, Caen, France

10:30–10:55 **Diana Carbone**

HEAVY-ION INDUCED SINGLE AND DOUBLE CHARGE EXCHANGE REACTIONS IN A MULTI-CHANNEL APPROACH: NEW RESULTS FROM THE NUMEN PROJECT

Laboratori Nazionali del Sud, Catania, Italy

10:55–11:10 Coffee Break

11:10–11:40 **Dimitar Tonev**

ADVANCED DOPPLER-SHIFT METHODS AND NUCLEAR CHIRALITY

Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, Sofia, Bulgaria

11:40–12:05 **Alessandro Compagnucci**

PROBING THE $^{10}\text{B}+\alpha$ REACTIONS AT LUNA FOR NUCLEOSYNTHESIS IN PRIMORDIAL STARS

SUPA, School of Physics and Astronomy, University of Edinburgh, Edinburgh, UK

12:30–14:00 Lunch Break

14:00–17:20 Session 2:

Chairperson: *Giovanni De Gregorio*

15:00–15:25 Giuseppe D’Agata

ANC METHOD: STANDARD USAGE AND RECENT UPDATES

University of Catania & INFN-LNS, Italy

15:25–15:50 Angel Demerdjiev

NEUTRON IRRADIATION OF SHIELDING STRUCTURES IN THE INRNE-BAS TR-24 CYCLOTRON FACILITY

Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, Sofia, Bulgaria

15:50–16:15 Jeongsu Ha

ABRUPT STRUCTURAL TRANSITION IN ^{84}Mo AND ^{86}Mo : AN ISOSPIN-SYMMETRIC ISLAND OF INVERSION

Center for Exotic Nuclear Studies, Institute for Basic Science, Daejeon, Korea

16:15–16:30 Coffee Break

Chairperson: *Gilles De France*

16:30–16:55 Antonino Pitronaci

DETECTION CHALLENGES WITH THE NEW MAGNEX GAS TRACKER: PRELIMINARIES AND PERSPECTIVES

Department of Physics and Astronomy “E. Majorana”, University of Catania, Catania, Italy

16:55–17:20 Radoslav Simeonov

IMPACT OF MIRROR MISALIGNMENT ON THE POINT SPREAD FUNCTION IN A SIMPLIFIED OPTICAL MODEL

Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, Sofia, Bulgaria

18:30-19:30 Welcome drink

19:30-21:30 Dinner - Italian Restaurant

Day 3: Tuesday, 15 September 2026

09:00–12:05 Session 3

Chairperson: Jie Meng

09:00–09:30 Peter Ring

BRUECKNER HARTREE-FOCK THEORY AS AN AB-INITIO APPROACH
FOR NUCLEAR DENSITY FUNCTIONAL THEORY
Technical University of Munich (TU), Munich, Germany

09:30–10:00 Baohua Sun

DEDUCING CHARGE RADII OF UNSTABLE ISOTOPES USING HADRONIC
PROBES
School of Physics, Beihang University, Beijing, China

10:00–10:25 Yiping Wang

CONFIGURATION-INTERACTION TIME-DEPENDENT DENSITY FUNC-
TIONAL THEORY FOR NUCLEAR DYNAMICS
Peking University, Beijing, China

10:25–10:50 Nikolay Goutev

AN EFFICIENCY EXTRAPOLATION METHOD FOR TRUE COINCIDENCE
SUMMING CORRECTION
*Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences,
Sofia, Bulgaria*

10:50–11:10 Coffee Break

Chairperson: Qibo Chen

11:10–11:40 Takaharu Otsuka

QUANTUM MECHANICAL ROTATIONS OF NUCLEAR ELLIPSOIDS AND
CLUSTERS
University of Tokyo & RIKEN, Japan

11:40–12:05 Qiang Zhao

EXACT-EXCHANGE RELATIVISTIC DENSITY FUNCTIONAL THEORY FOR
ATOMIC NUCLEI
China Institute of Atomic Energy (CIAE), Beijing, China

12:30–14:00 Lunch Break

14:00–17:20 Session 4

Chairperson: Giacomo de Angelis

15:00–15:30 Giovanni De Gregorio

NEUTRINOLESS DOUBLE-BETA DECAY WITHIN A CONSISTENT CHIRAL
EFT SHELL-MODEL FRAMEWORK
Università della Campania “Luigi Vanvitelli” & INFN, Italy

15:30–15:55 Gennaro Nunziata

QUANTUM ANNEALING FOR NUCLEAR MANY-BODY EIGENVALUE PROBLEMS

Università della Campania “Luigi Vanvitelli” & INFN, Italy

15:55–16:20 Mariana Petris

IMPLEMENTATION OF MSMGRPCS WITH AGING EFFECT SUPPRESSION IN LARGE SCALE HIGH INTERACTION RATE EXPERIMENTS

Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), Romania

16:20–16:35 Coffee Break

Chairperson: Nikolay Goutev

16:35–17:00 Krasimira Chakarova, Ventzislav Rusanov

MÖSSBAUER, X-RAY FLUORESCENCE AND XANES MEASUREMENTS ON COUNTERFEITED DOLLAR MONEY PAPER AND PIGMENTS

American College of Sofia, Sofia, Bulgaria

17:00–17:20 Hristo Hristov

NUCLEAR PHYSICS IN CLINICAL PRACTICE: FROM MEDICAL RADIONUCLIDE PRODUCTION TO DIAGNOSTIC IMAGING IN ONCOLOGY

INRNE-BAS & Medical University of Varna & University Hospital “St. Marina”, Varna, Bulgaria

Day 4: Wednesday, 16 September 2026

09:00–12:05 Session 5

Chairperson: Peter Ring

09:00–9:30 Jie Meng

RECENT ADVANCES IN NUCLEAR CHIRALITY: STRUCTURE AND REACTIONS

Peking University, Beijing, China

09:30–10:00 Qibo Chen

ENTANGLEMENT IN NUCLEAR CHIRAL ROTATION

East China Normal University, China

10:00–10:30 Yu Zhang

ALGEBRAIC MODEL ANALYSIS OF CHIRAL DOUBLET BANDS

Liaoning Normal University, China

10:30–10:55 Elena Stefanova

The Decay of the Head of the First $h_{11/2}$ Negative-Parity Band in ^{105}Ru

Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, Sofia, Bulgaria

10:55–11:15 Coffee Break

Chairperson: Y.P. Wang

11:15–11:45 Zhengxue Ren

DYNAMICS OF ROTATION IN CHIRAL NUCLEI

Nankai University, China

11:45–12:05 Galina Dimitrova

EVALUATION OF PROMPT AND RESIDUAL RADIATION FIELDS INDUCED BY BEAM LOSSES IN A TR-24 CYCLOTRON FACILITY

Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, Sofia, Bulgaria

12:20–12:30 Conference Photo

12:30–14:00 Lunch Break

09:00–12:05 Session 6

Chairperson: Angel Demerdjiev

15:00–15:25 Liliana-Panteleev Simeonova

SEMICONDUCTOR DETECTORS PARAMETERS INVESTIGATION

Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, Sofia, Bulgaria

15:25–15:50 Mladen Mitev

INFLUENCE OF THE OF NUCLEAR FUEL ISOTOPIC COMPOSITION ON THE ACTIVATION OF REACTOR INTERNALS

Technical University of Sofia, Sofia, Bulgaria & INRNE-BAS

15:50–16:15 Coffee Break

16:30–18:30 Poster Session

1. **Kalin Filipov**
FUNCTIONAL RESONANCE ANALYSIS METHOD AS AN ANALYTICAL
TOOL FOR ASSESSING THE IMPACT OF ACCIDENT TOLERANT FUEL IM-
PLEMENTATION ON FUNDAMENTAL NUCLEAR SAFETY FUNCTIONS IN
LIGHT WATER REACTORS
Technical University of Sofia, Sofia, Bulgaria
2. **Boyan Bonchev**
PYROPHORIC IRON NANOPARTICLES FORMED BY SELECTIVE EXTRAC-
TION FROM FE–AL ALLOYS: A MÖSSBAUER STUDY
*Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences,
Sofia, Bulgaria*
3. **Nikolay Petrov**
LOW-BACKGROUND GAMMA SPECTROMETRY SYSTEM FOR RADIOECO-
LOGICAL STUDIES
*Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences,
Sofia, Bulgaria*
4. **Elena Geleva**
APPLICATION OF NUCLEAR PHYSICS METHODS FOR THE DETERMINA-
TION OF RADIONUCLIDES IN NATURAL WATERS
*Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences,
Sofia, Bulgaria*

18:30 SOCIAL DINNER

Day 5: Thursday, 17 September 2026

9:30–11:25 Session 7

Chairperson: Mladen Mitev

09:30–9:55 Kristina Hadzhiyska

DATA GAPS IN ENERGY SYSTEM MODELING: IMPLICATION FOR
SCENARIO RELIABILITY

Institute for Nuclear Research and Nuclear Energy, BAS, Sofia, Bulgaria

09:55–10:20 Srebrin Kolev

PRACTICAL AND USER EXPERIENCE FROM UTILISING THE BEA-
CON CORE MONITORING SYSTEM AND THE APA H CODE PACKAGE
AT KOZLODUY NPP UNITS 5 AND 6

Kozloduy Nuclear Power Plant, Bulgaria

10:20–10:45 Nikolay Karaivanov

SIZE REDUCTION AND DECONTAMINATION WORKSHOP (SRDW)

State Enterprise Radioactive Waste, Bulgaria

10:45–11:05 Coffee Break

11:05–11:25 Petya Vryashkova

ASSESSMENT OF THE ACCIDENT PROGRESSION IN CASE OF
SBLOCA WITH DIFFERENT BREAK SIZES ALONG WITH SBO

Institute for Nuclear Research and Nuclear Energy, BAS, Sofia, Bulgaria

12:30–13:30 Lunch Break

14:00 Excursion

Day 6: Friday, 18 September 2026

9:30–10:55 Session 8

Chairperson: Elena Stefanova

09:30–09:50 Dinko Radnev

FROM OLYMPIAD MATHEMATICS TO NUCLEAR PHYSICS:
HOW MATHEMATICAL THINKING PREPARES FUTURE SCIENTISTS

Specialized High School of Natural Sciences and Mathematics "Academician Nikola Obreshkov", Burgas, Bulgaria

09:50–10:10 Vladimir Silvestrov

COMMISSIONING OF THE NATIONAL DISPOSAL FACILITY

State Enterprise Radioactive Waste, Bulgaria

10:10–10:35 Kalin Filipov

CHARACTERIZATION OF THE ISOTOPIC COMPOSITION OF
SPENT NUCLEAR FUEL IN LIGHT WATER REACTORS

Technical University of Sofia, Bulgaria

10:35–10:55 Desislava Dimitrova

Monitoring of ^{226}Ra in Bulgarian Drinking Waters

Institute for Nuclear Research and Nuclear Energy, BAS, Sofia, Bulgaria

10:55–11:45 Closing Ceremony