Programme of the 4th International Balkan School on Nuclear Physics

Wednesday, 22/9/2004

08.30 – 09.30 Registration
09.30 – 10.30 Opening Ceremony

School Programme

Chairman: Baki Akkus (Istanbul)

10.30 – 11.15 Richard Casten (Yale University, USA)
Introductory Lecture

11.15 – 11.45 Coffee Break

11.45 – 12.30 Ricardo Broglia (University of Milano, Italy/ INFN, Italy/ The Niels Bohr Institute, Germany)
Pairing in Nuclei (1)

12.30 – 13.15 Kim Lister (Argonne National Laboratory, USA)
Nuclear Correlations at the Limits of Stability: What Happens When the Bulk-Binding Stops? (1)

13.15 – 16.00 Lunch Break

16.00 – 16.45 Michael Bentley (Keele University, UK)
Coulomb Effects and Isobaric Multiplets (1)

16.45 – 17.30 Jon Billowes (University of Manchester, UK)
Laser Spectroscopy on Bunched Radioactive Ion Beams (1)

17.30 – 18.00 Coffee Break

18.00 – 19.00 Student Seminars

Chairman: Dennis Bonatsos (Athens)

Christoph Fransen (University of Koeln, Germany)
Low-Spin Gamma-Ray Spectroscopy Of The Doubly-Magic Nucleus $^{56}$Ni With The Miniball-Spectrometer

Rickard Du Rietz (Lund University, Sweden)
Effective Charges in The fp Shell

Andrey Blazhev (University of Sofia, Bulgaria/GSI, Darmstadt)
Delayed Spectroscopy of $^{98}$Cd

Dzmitry Shoukavy (Institute of Physics, Belarus)
Quantum Mechanical Scattering Problem in the Lobachevsky Space. The Effect of Curvature
Thursday, 23/9/2004

School Programme

Chairman: Borislav Slavov (Sofia)

09.15 – 10.00  Piet Van Isacker (GANIL, France)
Symmetries of the Nuclear Many-Body Problem (1)

10.00 – 10.45 Piet Van Isacker (GANIL, France)
Symmetries of the Nuclear Many-Body Problem (2)

10.45 – 11.15 Coffee Break

11.15 – 12.00 Richard Casten (Yale University, USA)
New Perspectives in Structural Evolution in Nuclei and in the Structure of Exotic Nuclei

12.00 – 12.45 Jan Jolie (University of Koeln, Germany)
The Rich Structures of a Simple Hamiltonian (1)

12.45 – 15.30 Lunch Break

15.30 – 16.00 POSTER SESSION

16.00 – 16.45 Norbert Pietralla (Stony Brook, USA)
Proton-Neutron Mixed-Symmetry States of Heavy Nuclei (1)

16.45 – 17.30 Dino Bazzacco (INFN, Italy)
Gamma Ray Tracking (1)

17.30 – 18.00 Coffee Break / POSTER SESSION

18.00 – 19.00 Student Seminars

Chairman: Dimiter Balabanski (Sofia/Camerino)

Stijn De Baerdemacker (Ghent University, Belgium)
Interplay Between Shellmodel and Collective Behaviour in the Z=50 Closed Shell Region

R. Burcu Cakirli (Istanbul University, Turkey)
Breakdown of Vibrational Structure in $^{98}$Ru

Andreas Linnemann (University of Koeln, Germany)
Investigation of Shape Coexistence in $^{106}$Cd

Stoyanka Ilieva (University of Sofia, Bulgaria)
Quasi-Gamma Band and Odd-Even Staggering Effect in $^{102}$Ru

20.00 Reception at Bodrum Castle
Friday, 24/9/2004

School Programme

Chairman: Istvan Bikit (Novi Sad)

09.15 – 10.00  Ricardo Broglio (University of Milano, Italy/ INFN, Italy/ The Niels Bohr Institute, Germany)
Pairing in Nuclei (2)

10.00 – 10.45  Michael Bentley (Keele University, UK)
Coulomb Effects and Isobaric Multiplets (2)

10.45 – 11.15  Coffee Break

11.15 – 12.00  Roelof Bijker (ICN-UNAM, Mexico City)
Shape Phase Transitions in Nuclei and Random Interactions (1)

12.00 – 12.45  Norbert Pietralla (Stony Brook, USA)
Proton-Neutron Mixed-Symmetry States of Heavy Nuclei (2)

12.45 – 15.30  Lunch Break

15.30 – 16.00  POSTER SESSION

16.00 – 16.45  Jon Billowes (University of Manchester, UK)
Laser Spectroscopy on Bunched Radioactive Ion Beams (2)

16.45 – 17.30  Dino Bazzacco (INFN, Italy)
Gamma-Ray Tracking (2)

17.30 – 18.00  Coffee Break / POSTER SESSION

18.00 – 19.00  Student Seminars  Chairman: Nizamettin Erduran (Istanbul)

Veerle Hellemans (Ghent University, Belgium)
Configuration Mixing and B(E2)-Values in $^{188}$Pb

Kalin Gladnishki (University of Sofia, Bulgaria)
Lifetimes in the $\nu 1^+_1{3/2} \otimes \pi (13/2, 9/2)$ M1 Band in $^{193}$Pb

Nikola Nikolov (University of Sofia, Bulgaria)
Particle Plus Triaxial Rotor Model (PTRM) Calculations for Transitional Ir and Au Nuclei in A~190 Mass Region

Mustafa Yilmaz (University of Gaziantep, Turkey)
Symmetry Properties of the Energy Bands in Deformed Heavy Nuclei

20.30 – 22.00  Football Game
TEAM 1 (Captain: Nizamettin Erduran)
TEAM 2 (Captain: Dimiter Balabanski)
Saturday, 25/9/2004

09.15 – 13.00  Seminars  Chairman: Dimiter Balabanski (Sofia/Camerino)

09.15 – 09.45  Ayse Atac Nyberg (Uppsala Universitet Inst. for Stralningsvetenskap, Sweden)
Fast Neutrons in Biomedical Applications

09.45 – 10.15  Dimitris Lenis (N.C.S.R. Demokritos, Greece)
Novel Developments in Critical Point Symmetries

10.15 – 11.00  Student Seminars

   Dimitris Petrellis (N.C.S.R. Demokritos, Greece)
Variational Procedure Leading from Davidson Potentials to the E(5) and X(5)
Critical Point Symmetries

   Huben Ganev (University of Sofia, Bulgaria)
Distribution of the Low-Lying Collective States in the Framework of the
Interacting Vector Boson Model

   Milan Krticka (Charles University, Czech Republic)
Exploitation of Large Gamma-Detector Arrays for Studying the Gamma Decay
Following the Neutron Capture in Medium-Weight and Heavy Nuclei

11.00 – 11.30  Coffee Break / Voting for Best Posters

11.30 – 12.00  Dimitar Tonev (INFN, Italy)
Lifetime Measurements: A Powerful Tool to Check for Existence of Dynamical
Symmetries in Nuclei

12.00 – 13.00  Student Seminars

   Victor Iacob (Texas A&M University, USA)
Precise ft-Value Measurements for the Superallowed 0^+ → 0^+ \beta-Decay of \textsuperscript{34}Ar

   Natasa Todorovic (University of Novi Sad, Serbia and Montenegro)
0ν Mode in Double Beta Decay in \textsuperscript{50}Cr

   Elzbieta Wojcik (Warsaw University, Poland)
Giant Dipole Radiation and Isospin Mixing in \textsuperscript{36}Ar Nuclei

   Miguel Costa Lopes (Instituto Superior Tecnico, Portugal)
Importance of the Coriolis Coupling in Odd-Odd Deformed Proton
Emitters

23.00  Halikarnas Disco (free)
Monday, 27/9/2004

School Programme

Chairman: Istvan Bikit (Novi Sad)

09.15 – 10.00  David Lunney (Université de Paris Sud, France)
Mass Measurements of Exotic Nuclides for Nuclear Structure, Weak Interactions and Astrophysics (I)

10.00 – 10.45  Gerda Neyens (K.U. Leuven, Belgium)
Static Moments of Spin-Oriented Exotic Nuclei (I)

10.45 – 11.15  Coffee Break

11.15 – 12.00  Michael Hass (The Weizmann Institute, Israel)
Solar Fusion Reactions: From Neutrino Masses to Big-Bang Nucleo-Synthesis (I)

12.00 – 12.45  Roelof Bijker (ICN-UNAM, Mexico City)
Shape Phase Transitions in Nuclei and Random Interactions (2)

12.45 – 16.00  Lunch Break

16.00 – 16.45  Kim Lister (Argonne National Laboratory, USA)
Nuclear Correlations at the Limits of Stability: What Happens When the Bulk-Binding Stops? (2)

16.45 – 17.30  Juergen Gerl (GSI, Darmstadt, Germany)
Nuclear Spectroscopy of Exotic Nuclei with RISING

17.30 – 18.00  Coffee Break

18.00 – 19.00  Student Seminars  Chairman: Dennis Bonatsos (Athens)

Radomira Lozeva (University of Sofia, Bulgaria/ GSI, Germany)
Calorimeter Telescope For Identification of Relativistic HI Reaction Channels

Juan Urrego-Blanco (University of Tennessee, USA / Oak Ridge National Laboratory, USA)
Perspectives in the Development of a Polarized Solid Target for RIB Experiments

Neele Vermeulen (K.U.Leuven, Belgium)
Quadrupole Moments of Neutron Rich Isomeric States Produced Via Projectile Fragmentation

1st poster winner

20.00  School Dinner (Turkish Night)
Tuesday, 28/9/2004

School Programme

Chairman: Borislav Slavov (Sofia)

09.15 – 10.00 Andreas Karydas (NCSR “Demokritos, Greece)
Analytical Nuclear and Atomic Ion-Beam Methods: Basic Principles and Applications (1)

10.00 – 10.45 Juergen Gerl (GSI, Darmstadt, Germany)
The Facility for Antiproton and Ion Research –FAIR– at GSI

10.45 – 11.15 Coffee Break

11.15 – 12.00 Michael Hass (The Weizmann Institute, Israel)
Solar Fusion Reactions: From Neutrino Masses to Big-Bang Nucleo-Synthesis (2)

12.00 – 12.45 David Lunney (Université de Paris Sud, France)
Mass Measurements of Exotic Nuclides for Nuclear Structure, Weak Interactions and Astrophysics (2)

12.45 – 16.00 Lunch Break

16.00 – 16.45 Jan Jolie (University of Koeln, Germany)
The Rich Structures of a Simple Hamiltonian (2)

16.45 – 17.15 Theodoros Gaitanos (University of Catania, Italy)
Isospin Effects in Intermediate Energy Heavy Ion Collisions

17:15 – 17:30 Olimpia Kijewska (Institute of Experimental Physics, Poland)
20Ne+12C Reaction at 5 and 9 Mev/u Studied at the Warsaw Cyclotrone

17.30 – 18.00 Coffee Break

18.00 – 19.00 Student Seminars

Chairman: Dimiter Balabanski (Sofia/Camerino)

Atsushi Umeya (Tokyo Institute of Technology, Tokyo)
Single-Particle Energies in Neutron-Rich Nuclei

Deyan Yordanov (K.U.Leuven, Belgium)
Spins and Magnetic Moments of Optically Polarized 29,31Mg Beams Determined via β Decay Asymmetry Measurements

Mehtap Yalcinkaya (Istanbul University, Turkey)
Photoelectron and Photoion Spectroscopy of Transition Metal Compounds Using Synchrotron Radiation

2nd poster winner

19.00 – 20.30 Dinner

20.30 – 22.00 Football Game: Rematch

TEAM 1 (Captain: Nizamettin Erduran)
TEAM 2 (Captain: Dimiter Balabanski)

Basketball game
Wednesday, 29/9/2004

School Programme

Chairman: Baki Akkus (Istanbul)

09.15 – 10.00 David Lunney (Université de Paris Sud, France)
Mass Measurements of Exotic Nuclides for Nuclear Structure, Weak Interactions and Astrophysics (3)

10.00 – 10.45 Gerda Neyens (K.U. Leuven, Belgium)
Static Moments of Spin-Oriented Exotic Nuclei (2)

10.45 – 11.15 Coffee Break

11.15 – 12.00 Andreas Karydas (NCSR “Demokritos, Greece)
Analytical Nuclear and Atomic Ion-Beam Methods: Basic Principles and Applications (2)

12.00 – 12.45 Norbert Pietralla (Stony Brook, USA)
Nuclear Structure toward Rigid Rotation (3)

12.45 – 16.00 Lunch Break

16.00 – 17.30 Seminars
Chairman: Nizamettin Erduran (Istanbul)

16.00 – 16.30 Hristo Lafchiev (Bulgarian Academy of Sciences, Bulgaria)
The Higher Tamm-Dankov Cranking Approximation (CHTDA) for Superdeformed A~190 Rotating Bands

16.30 – 17.00 Student Seminars

Kris Van Houcke (Ghent University, Belgium)
Quantum Monte Carlo Methods for the Interacting Boson Model

Sukhendusekhar Sarkar (The University of Burdwan, India)
Shell Model Predictions for Very Neutron-Rich Nuclei in $^{132}$Sn Region: Interesting Features of Effective-Charge Revealed

17:00 - 17:30 Coffee Break

17.30 – 18.30 Student Seminars

Ali Tutay (Istanbul University, Turkey)
The Study of Temperature and Correlation Between Intermediate Mass Fragments and Light Particles in the $^{32}$S + $^{58}$Ni Reaction at 30 MeV/A

Ghania Medkour (USTHB, Algeria)
Low Energy Fission Dynamics

Zhanna Mezentseva (Institute of Physics and Power Engineering, Russia)
The Investigation of the Resonance Structure of Fissionable and Constructional Materials Using the Multiplicity Spectrometry

3rd poster winner

18.30 – 19.00 Closing of the 4th Balkan School
POSTER PRESENTERS

1. Azad Ahmadov (JINR, 141980 Dubna, Russia)
   *Spin Effects in Processes of Single Top and Top-Anti-Top Quarks Productions in Proton Colliders*

2. Yuri Alexandrov (JINR, Russia)
   *Some Principal Problems in Physics and Neutron Low Energy Physics*

3. Etele Albert (University of Medicine and Pharmacy, ROMANIA)
   *Irradiation Activity of Some Plants Grown in Volcanic Regions*

4. Lilya Atanasova (University of Sofia, Bulgaria)
   *High-Spin States in $^{185}$Ir*

5. Anca Bancuta (Valahia University of Targoviste, Romania)
   *Atomic Absorption Spectrometry in Leaves Trees Analysis*

6. Pinar Can (Istanbul University, Turkey)
   *Spectroscopy of $^{136}$La*

7. Dejan Jokovic (Institute of Physics, Belgrade, Serbia)
   *Modifying the Standard Liquid Drop Model*

8. Stephane Lalkovski (University of Sofia, Bulgaria)
   *Ground-Gamma Band Mixing and Evolution of Collectivity in Even-Even Neutron-Rich Nuclei with $40 < Z < 50$*

9. Dusan Mrdja (Faculty of Science, Novi Sad, Serbia and Montenegro)
   *Low Level Shielding Problems of Gamma Spectrometers*

10. Ayodeji Olorunsola (Olabisi Onabanjo University, Nigeria)

11. Mourad Ramdhane (Université Mentouri Constantine, Algeria)
    *Spectroscopy Studies by $\beta$ Decay and Delayed Particles*

12. Vadim Sircheli (Moldova State University, Moldova)
    *Radiative Recombination Centers in ZnSe-Based Scintillators for Ionizing-Radiation Detectors*

13. Ibrahim Yigitoglu (Istanbul University, Turkey)
    *Spectroscopic Investigation of $^{187}$Ir*

14. Gheorghe Zet (Department of Physics Technical University of Iasi, Romania)
    *Magnetic Moment Values of Baryons as a Consequence of SL(3,C) Symmetry*

15. Mirjana Djurasevic (Institute of Nuclear Sciences, Vinca, Serbia and Montenegro)
    *Optimum Conditions for a Zns(Ag) Scintillation Detector Operation*