

CHANGING FACETS OF NUCLEAR STRUCTURE

VICO EQUENSE, MAY 20–24, 2007

PROGRAM

Sunday, May 20

9:00 Opening address

L. Merola, Head, Sezione di Napoli of the Istituto Nazionale di Fisica Nucleare (INFN)

A. Covello, Seminar Chairman

Chairperson: **D. Schwalm** (*Heidelberg*)

9:30 **A. Shotter** (*TRIUMF*): Radioactive Beams at TRIUMF

10:00 **H. Ueno** (*RIKEN*): Status of RI Beam Factory Project at RIKEN

10:30 Coffee break

11:00 **M. Thoennessen** (*Michigan*): Unbound States of Neutron-Rich Oxygen Isotopes

11:30 **C. Baktash** (*Oak Ridge*): Nuclear Structure Studies in the ^{132}Sn Region Using Accelerated Radioactive Ion Beams

12:00 **L. S. Ferreira** (*Lisboa*): Observing the Nuclear Drip Lines

12:20 Session close

Chairperson: **P. Sona** (*Firenze*)

15:00 **J. Äystö** (*Jyväskylä*): Nuclear Structure Studies of N -rich Nuclei Using ISOL Facilities at CERN and Jyväskylä

15:30 **F. Azaiez** (*Orsay*): Shell Structure Evolution Far from Stability: Recent Results from GANIL

16:00 **N. Benczer-Koller** (*Rutgers*): Magnetic Moment Measurements: Pushing the Limits

16:30 Coffee break

17:00 **A.V. Ramayya** (*Vanderbilt*): Technique for Measuring Angular Correlations and g -Factors of Excited States with Large Multi-Detector Arrays: an Application to Neutron Rich Nuclei Produced by the Spontaneous Fission of ^{252}Cf

17:20 **C. Fahlander** (*Lund*): Isospin Symmetry and Proton Decay; Identification of the 10^+ Isomer in ^{54}Ni

17:40 **G. de Angelis** (*Legnaro*): Exploring the Evolution of the Shell Structure by Means of Deep Inelastic Reactions

18:00 **S. Lunardi** (*Padova*): Spectroscopy of Neutron-Rich Nuclei in the $A \approx 60$ Region

18:20 **D. Q. Fang** (*Shanghai*): Studies on the exotic structure of ^{23}Al by measurements of σ_R and $P_{//}$

18:40 **M. Tomaselli** (*Darmstadt*): Level Structures, Transitions and Correlated Beta-Decay of Exotic Nuclei

19:00 Session close

Monday, May 21

Chairperson: **L. Moretto** (*Berkeley*)

9:00 **P. Egelhof** (*GSI*): Nuclear Structure Studies on Exotic Nuclei with Radioactive Beams – Present Status and Future Perspectives at FAIR

9:30 **G. Prete** (*Legnaro*): The SPES Direct Target Project at the Laboratori Nazionali di Legnaro

10:00 **J. Wambach** (*Darmstadt*): Modern Aspects of Nuclear Structure Theory

10:30 **R. Schiavilla** (*Jefferson Lab.*): Correlations in Nuclei: Recent Progress on an Old Problem

11:00 Coffee break

- 11:30 **I. Sick** (*Basel*): Correlated Nucleons in k - and r -Space
 12:00 **T.T.S. Kuo** (*Stony Brook*): Roles of All-Order Core Polarization and Brown-Rho Scaling in Nucleon Effective Interactions
 12:30 **A. Schwenk** (*TRIUMF*): Low-Momentum Interactions for Nuclei
 13:00 Session Close

Chairperson: **V. Voronov** (*Dubna*)

- 15:00 **P. Vary** (*Iowa*): *Ab-initio* & *ab-exitu* No-Core Shell Model
 15:30 **G. Hagen** (*Oak Ridge*): *Ab-Initio* Coupled Cluster Theory for Nuclear Structure
 15:50 **J. P. Draayer** (*Baton Rouge*): Symplectic No-Core Shell Model
 16:10 **T. Dytrych** (*Baton Rouge*): Role of Two-Particle-Two-Hole Symplectic Irreducible Representations in *ab Initio* No-Core Shell Model Results for Light Nuclei
 16:30 Coffee break
 17:00 **A. Faessler** (*Tübingen*): Nuclear Structure, Double Beta Decay and Test of Physics Beyond the Standard Model
 17:30 **A. A. Raduta** (*Bucharest*): Double Beta Decay to the First 2^+ State
 18:00 **N. Van Giai** (*Orsay*): Pion-Induced Interaction in Relativistic Hartree-Fock
 18:20 Session close

Tuesday, May 22

Chairperson: **N. Benczer-Koller** (*Rutgers*)

- 9:00 **I. Talmi** (*Rehovot*): Structure of $A = 14$ Nuclei: The NCSM and the Shell Model
 9:20 **B. A. Brown** (*Michigan*): New Theoretical Results for *sd* and *pf* Shell Nuclei
 9:50 **A. Covello** (*Napoli*): Realistic Shell-Model Calculations for Exotic Nuclei Around Closed Shells
 10:10 **H. Mach** (*Notre Dame/Uppsala*): New Results on the Simple Nuclear Systems just above ^{132}Sn
 10:30 Coffee break
 11:00 **N. Itaco** (*Napoli*): Shell-Model Calculations with Low-Momentum Nucleon-Nucleon Interactions Based upon Chiral Perturbation Theory
 11:20 **B. Fornal** (*Kraków*): Shell-Model States in Neutron-Rich Ca and Ar Nuclei
 11:40 **A. Heusler** (*Heidelberg*): Nuclear Structure Information from $\text{Pb}(p, p')$ via Isobaric Analog Resonances in Bi
 12:00 **D. L. Balabanski** (*Camerino*): First Results from the g -RISING Campaign: the g -Factor of the $19/2^+$ Isomer in ^{127}Sn
 12:20 Session close

Wednesday, May 24

Chairperson: **L. Ferreira** (*Lisboa*)

- 9:00 **J. N. Ginocchio** (*Los Alamos*): From the Quark Shell Model to the Nuclear Shell Model
 9:20 **S. S. Dimitrova** (*Sofia*): Density Matrix Renormalization Group Method for Large-Scale Nuclear Shell Model Problems
 9:40 **M. Horoi** (*Michigan*): Shell Model Correlations in Nuclei: Coexistence of Spherical, Deformed and Superdeformed Bands
 10:00 **R. Orlandi** (*Legnaro*): Lifetime Measurements in ^{67}Se and ^{67}As as Mirror Pair: a Test of Isospin Symmetry Breaking
 10:20 **R. Schwengner** (*Dresden*): Dipole-Strength Distributions up to the Giant Dipole Resonance Deduced from Photon Scattering
 10:40 Coffee break

- 11:10 **N. Pietralla** (*Köln*): Isovector Quadrupole Excitations in the Valence Shell of Vibrational Nuclei
11:40 **P. von Neuman Cosel** (*Darmstadt*): Soft Electric Dipole Modes: Some Selected Examples
12:10 **A. Zilges** (*Darmstadt*): The Structure of the Pygmy Dipole Resonance

12:40 Session close

Chairperson: **A. A. Raduta** (*Bucharest*)

- 15:00 **S. Antalic** (*Bratislava*): Beta-Delayed Fission Activity in the Bi-At Region
15:20 **P. G. Bizzeti** (*Firenze*): Critical Point Behaviour of ^{224}Ra and ^{224}Th
15:40 **I. Hamamoto** (*Lund*): Chiral Bands in Nuclei?
16:00 **S. Leoni** (*Milano*): Nuclear Structure at Extreme Conditions through Gamma Spectroscopy Measurements
16:20 **N. Lo Iudice** (*Napoli*): Collective bands in Superdeformed Nuclei
16:40 Coffee break
17:10 **K. Sugawara-Tanabe** (*Tokyo*): Selection Rules for the Intra and Interband Electromagnetic Transitions and Quantum Numbers for the Triaxial Rotor in Odd A Nuclei
17:30 **Ch. Stoyanov** (*Sofia*): Nuclear Structure Calculation at Large Domain of Excitation Energy
17:50 **J. Kvasil** (*Prague*): TDDFT with Skyrme Forces: Description of Giant Resonances in Deformed Nuclei
18:10 Session close

Thursday, May 24

Chairperson: **G. Pisent** (*Padova*)

- 9:00 **J. H. Hamilton** (*Vanderbilt*): Even- and Odd-Parity Bands in $^{108,110,112}\text{Ru}$ and Odd-Parity Doublets in ^{106}Mo
9:20 **V. V. Voronov** (*Dubna*): Finite Rank Approximation for Skyrme Forces and Effects of the Particle-Particle Channel
9:40 **N. D. Dang** (*RIKEN*): Thermal Pairing in Nuclei
10:00 **F. Palumbo** (*Frascati*): Odd Nuclei in a Number Conserving Approach to Bosonization
10:20 **V. I. Abrosimov** (*Kiev*): Kinetic Equation for Nuclear Response with Pairing
10:40 Coffee break
11:10 **V. Sushkov** (*Dubna*): Low-Lying 0^+ states in Deformed Nuclei
11:30 **F. Andreozzi** (*Napoli*): New Microscopic Approach to Multiphonon Nuclear Spectra
11:50 **K. Tanabe** (*Saitama*): Variational Equation for Quantum Number Projection
12:10 Session close

Chairperson: **J. Wambach** (*Darmstadt*)

- 15:00 **L. G. Moretto** (*Berkeley*): Phase Diagram of Uncharged, Symmetric, Infinite Nuclear Matter from Multifragmentation Data
15:20 **J. M. G. Gómez** (*Madrid*): Recent Developments in the Spectral Fluctuations of Nuclei, Hadrons and Other Quantum Systems
15:40 **D. Schwalm** (*Heidelberg*): Bremsstrahlung Accompanied α Decay of ^{210}Po
16:00 **M. Gai** (*Connecticut*): The Coulomb Dissociation of ^8B ; a New Tool for Nuclear Astrophysics
16:20 Coffee break

Chairperson: **A. Covello** (*Napoli*)

- 16:50 Round Table Discussion on “*Trends and Perspectives in Nuclear Structure*”
G. de Angelis, F. Azaiez, C. Baktash, J. P. Draayer, A. Faessler, I. Talmi