

Program of CGS15

Monday, 25.08.2014

Session 1 – Room 120, Chair K. Zuber

- 09:30 **Opening**
- 10:00 **Testing CVC and CKM unitarity via superallowed nuclear beta decay**
J.C. Hardy
- 10:30 **Inelastic Neutron Scattering Studies of ^{76}Ge and ^{76}Se : Relevance to Neutrinoless Double- β Decay**
S.W. Yates
- 11:00 **Break**

Session 2 – Room 120, Chair P. Garrett

- 11:30 **New Information on the Occurrence of O(6) Symmetry in Nuclei**
N. Pietralla
- 12:00 **Measurements of neutron-induced capture cross-sections at the n_TOF facility at CERN**
M. Barbagallo
- 12:30 **Impact of neutron capture reactions on s-process nucleosynthesis**
M. Pignatari
- 13:00 **Lunch**

Session 3 – Room 120: Nuclear Structure, Chair N. Lo Iudice

- 14:30 **Complementarity in nuclear structure studies** (Book of Abstracts – Session 5)
P. E. Garrett
- 15:00 **Disentangling the nuclear shape coexistence in even-even Hg isotopes using the interacting boson model**
J.-E. García-Ramos
- 15:20 **Collectivity in Gadolinium**
S. R. Leshner
- 15:40 **Partial dynamical symmetry and odd-even staggering in deformed nuclei**
A. Leviatan
- 16:00 **Break**

Session 4 – Room 028: Nuclear Reactions, Chair T. Belgia

- 14:30 **$^{89,90}\text{Zr}(n,\gamma)$ and $^{87}\text{Y}(n,\gamma)$ from surrogate reaction approach**
S. Ota
- 15:00 **Studies of $^{54,56}\text{Fe}$ neutron scattering cross sections**
S.F. Hicks
- 15:20 **$^{124}\text{Xe}(n,\gamma)^{125}\text{Xe}$ and $^{124}\text{Xe}(n,2n)^{123}\text{Xe}$ measurements for National Ignition Facility**
M. Bhike
- 15:40 **Neutron Capture Cross Section Measurement on ^{91}Zr at J-PARC/MLF/ANNRI**
J. Hori
- 16:00 **Break**

Session 5 – Room 120: Nuclear Structure, Chair T. Otsuka

- 16:30 **Spectroscopy of the cadmium isotopes** (Book of Abstracts – Session 29)
J. L. Wood
- 17:00 **Microscopic analysis of quadrupole-octupole shape evolution**
K. Nomura
- 17:30 **Shell model estimate of electric dipole moment in medium and heavy nuclei**
E. Teruya
- 17:50 **Octupole Correlations in Positive-Parity States of the Rare-Earth and Actinide Nuclei**
M. Spieker
- 18:10 **No-spin states and low-lying structures in ^{130}Xe and ^{136}Xe**
T.J. Ross
- 18:30 **The structure of rotational bands in alpha-cluster nuclei**
R. Bijker

18:50 – 21:00 **Welcome reception**

Session 6 – Room 028: Nuclear Reactions, Chair A. Plompen

- 16:30 **Measurement of neutron capture cross-sections of ^{89}Y at average neutron energies of 15-36 MeV**
G.N. Kim
- 17:00 **Photoneutron cross section measurements on Sm isotopes**
D. Filipescu
- 17:30 **γ -ray production cross sections of inelastic neutron scattering on natural molybdenum**
M. Nyman
- 17:50 **Neutron capture cross section and capture gamma-ray spectra of ^{138}Ba in the keV-neutron energy region**
T. Katabuchi
- 18:10 **Experimental neutron capture data of ^{58}Ni from the CERN n_TOF facility**
P. Žugec
- 18:30 **Measurement of the γ emission probability of ^{173}Yb using transfer reactions**
O. Delaune

18:50 – 21:00 **Welcome reception**

Tuesday, 26.08.2014

Session 7 – Room 120: Nuclear Structure, Chair A. Junghans

- 08:30 **Combined study of the gamma-ray strength function of ^{114}Cd with (n, γ) and (γ , γ') reactions** (Book of Abstracts – Session 4)
T. Belgia
- 09:00 **The Generalized Centroid Difference method for lifetime measurements via γ - γ coincidences using large fast-timing arrays**
J.-M. Régis
- 09:30 **The (n, γ) campaigns at EXILL**
J. Jolie
- 10:00 **From EXILL to FIPPS**
A. Blanc
- 10:30 **Break**

Session 8 – Room 028: Nuclear Astrophysics, Chair M. Wiescher

- 08:30 **Heating and cooling in neutron star crusts and what rare isotope facilities can do about it**
H. Schatz
- 09:00 **Underground cross section measurements of stellar reactions at astrophysically relevant energies**
A. Formicola
- 09:30 **The future of Nuclear Astrophysics at LUNA**
M. Junker
- 10:00 **Nuclear masses and neutron stars**
S. Kreim
- 10:30 **Break**

Session 9 – Room 120: Nuclear Structure, Chair N. Pietralla

- 11:00 **Shapes of exotic nuclei and shell evolution**
T. Otsuka
- 11:30 **A shell-model study of the light Cd isotopes**
A. Blazhev
- 12:00 **Recent development of projected shell model based on many-body techniques**
Y. Sun
- 12:30 **Lunch**

Session 10 – Room 028: Nuclear Astrophysics, Chair R. Reifarth

- 11:00 **Neutron radiative-capture reactions on nuclei of relevance to $0\nu\beta\beta$ dark matter and neutrino/antineutrino searches**
W. Tornow
- 11:30 **Neutrinos and the synthesis of heavy elements**
O. L. Caballero
- 12:00 **Nuclear masses near closed shells and their impact on r -process abundances**
M. R. Mumpower
- 12:30 **Lunch**

Session 11 – Room 120: Nuclear Structure, Chair A. Zilges

- 14:00 **Dipole response in neutron rich nuclei within self-consistent approaches using realistic potentials**
N. Lo Iudice
- 14:30 **Isospin transfer modes in exotic nuclei**
E. Litvinova
- 15:00 **E1 pygmy strength: new remarkable features**
V.O. Nesterenko
- 15:20 **Pygmy resonances and nucleosynthesis**
N. Tsoneva
- 15:40 **The multipolarity of the low-energy γ -strength from a radiative proton capture experiment**
A.V. Voinov
- 16:00 **Break**

Session 12 – Room 028: Nuclear Astrophysics, Chair A. Aprahamian

- 14:00 **Beta-delayed neutron emission and its role in the r-process**
I. Dillmann
- 14:30 **Constraining nucleosynthesis in stellar explosions through nuclear physics experiments**
A. Parikh
- 15:00 **Low-energy resonances in the $^{22}\text{Ne}(p,\gamma)^{23}\text{Na}$ reaction directly observed at LUNA**
F. Cavanna
- 15:20 **Direct measurement of $^4\text{He}(^{12}\text{C}, ^{16}\text{O})\gamma$ total cross section near stellar energy**
K. Fujita
- 15:40 **Measurement of the $^{92,93,94,100}\text{Mo}(\gamma,n)$ reactions by Coulomb Dissociation and simulations for p-process nucleosynthesis**
K. Göbel
- 16:00 **Break**

Session 13 – Room 120: Nuclear Structure/Reactions, Chair Y. Sun

- 16:30 **The Facility for Rare Isotope Beams**
C. Wrede
- 17:00 **Gamow-Teller decays of beta delayed neutron emitters**
R. Grzywacz
- 17:30 **Failure of the Gross Theory of Beta Decay in Neutron Deficient Nuclei**
R. B. Firestone
- 17:50 **Study of isomer and proton decays in $N \approx Z$ nuclei below ^{100}Sn**
K. Moschner
- 18:10 **Excited State Transitions in Double Beta Decay: A brief Review**
B. Lehnert
- 18:30 **Neutron-cross-section measurements on germanium with fast quasi-monoenergetic neutrons**
A.R. Domula

18:50 – 21:00 **Postersession**

Session 14 – Room 028: Techniques/Reactions, Chair M. Scheck

- 16:30 **Resonant atomic collisions as a probe for nuclear properties**
C. Brandau (Book of Abstracts – Session 26)
- 17:00 **Measurements with the Multi-Reflection Time-of-Flight Mass Spectrometer of ISOLTRAP at ISOLDE/CERN**
F. Wienholtz
- 17:30 **Search for anomalous elastic electron scattering from protons at keV energies**
R. Moreh
- 17:50 **Probing the resonance structure in ^{12}C above the triple-alpha threshold**
A. M. Howard
- 18:10 **α induced reaction cross section measurements on ^{162}Er and the study of the α width at low energies**
G.G. Kiss
- 18:30 **Inelastic neutron scattering studies of $^{132,134}\text{Xe}$: Elucidating structure in a transitional region and possible interferences for $0\nu\beta\beta$ searches**
E.E. Peters

18:50 – 21:00 **Postersession**

Wednesday, 27.08.2014

Session 15 – Room 120: Nuclear Structure, Chair S. Siem

- 08:30 **The Pygmy Dipole Resonance – past, presence and future**
A. Zilges
- 09:00 **Electric dipole response from forward-angle polarized proton scattering, neutron skin and the neutron equation of state**
P. von Neumann-Cosel
- 09:30 **Nuclear Structure Studies with Gamma-Ray Beams**
A. Tonchev
- 10:00 **Dipole strength distributions from HIGS experiments**
V. Werner
- 10:30 **Break**

Session 16 – Room 028: Nuclear Data/Reactions, Chair W. Tornow

- 08:30 **Cross section measurements with applications to nuclear energy**
A. Plompen
- 09:00 **Accuracy Improvement of Neutron Nuclear Data on Minor Actinides**
H. Harada
- 09:30 **Total Absorption Gamma-ray Spectroscopy measurements for basic and applied γ -decay studies**
J. L. Tain
- 10:00 **Validating (d,p γ) as a Surrogate for Neutron Capture**
A. Ratkiewicz
- 10:30 **Break**

Session 17 – Room 120: Nuclear Structure, Chair I. Dillmann

- 11:00 **Exotic nuclei studied with the 8pi spectrometer at TRIUMF**
A.B. Garnsworthy
- 11:30 **Shape-coexisting nature in the Pb region at REX Isolde**
K. Wrzosek-Lipska
- 12:00 **Spectroscopy of the Heaviest Elements**
U. Forsberg
- 12:30 **Lunch**

14:00 **Excursion and Conference Dinner**

Session 18 – Room 028: Nuclear Reactions, Chair M. Barbagallo

- 11:00 **Measurements of neutron-induced reactions in inverse kinematics**
R. Reifarth
- 11:30 **The Neutron Time-of-Flight Cross Section Program at the University of Kentucky**
J.R. Vanhoy
- 12:00 **Fast-neutron measurements at the nELBE time-of-flight facility**
A. Junghans (Book of Abstracts – Session 33)
- 12:30 **Lunch**

14:00 **Excursion and Conference Dinner**

Thursday, 28.08.2014

Session 19 – Room 120: Nuclear Structure, Chair P. Doornenbal

- 08:30 **In-beam γ -ray spectroscopy of very exotic $N = 32$ and 34 isotones**
D. Steppenbeck
- 09:00 **High precision mass measurements of rare isotopes at TITAN**
S. Ettenauer
- 09:30 **Masses of exotic calcium isotopes and three-nucleon forces**
J. Menéndez
- 10:00 **Resonances in ^{11}Li through inelastic scattering reactions** (Book of Abstracts – Session 29)
R. Kanungo
- 10:30 **Break**

Session 20 – Room 028: Statistical Properties, Chair A. Tonchev

- 08:30 **Statistical properties of warm nuclei**
S. Siem
- 09:00 **Statistical Model Calculations for (n,γ) Reactions**
M. Beard
- 09:30 **Low-energy enhancement of magnetic dipole radiation**
S. Frauendorf
- 10:00 **First evidence of low energy upbend in germanium isotopes**
T. Renstrøm
- 10:30 **Break**

Session 21 – Room 120: Fundamental Properties, Chair S. Yates

- 11:00 **Gravity Resonance Spectroscopy constrains Dark Matter and Dark Energy Scenarios**
H. Abele
- 11:30 **Investigations of the time-modulated orbital electron capture decays**
Y.A. Litvinov
- 12:00 **Improving CKM Unitarity Limits via Low-Energy Nuclear Physics**
P. Finlay
- 12:30 **Lunch**

Session 22 – Room 028: Nuclear Reactions/Data, Chair S. Wender

- 11:00 **Nuclear Diagnostics at the National Ignition Facility**
D.L. Bleuel
- 11:30 **Cross Section Measurements at LANSCE for Defense, Energy and Science Applications**
R.O. Nelson
- 12:00 **Prompt gamma-ray production in neutron-induced fission of ^{239}Pu**
J.L. Ullmann
- 12:30 **Lunch**

Session 23 – Room 120: Nuclear Reactions/Structure, Chair P. von Neumann-Cosel

- 14:00 **Relating nuclear molecular structure and sub-Coulomb fusion in the $^{12}\text{C} + ^{12}\text{C}$ collision using time-dependent wave-packet dynamics**
A. Diaz-Torres

- 14:30 **^{137}Ba Double Gamma Decay Measurement with GAMMASPHERE**
E. Merchan
- 15:00 **Measurements of Gamma-ray Energy and Multiplicity from $^{235}\text{U}(\text{n}_{\text{thermal}})$ and ^{252}Cf with STEFF**
A.J. Pollitt
- 15:20 **Microscopic nature of the photon strength function: stable and unstable Ni and Sn isotopes**
S. Kamerdzhiev
- 15:40 **Lifetime Measurements and Direct Determination of Ground-State Transition Widths with the Method of Self Absorption**
C. Romig
- 16:00 **Break**

Session 24 – Room 028: Nuclear Reactions/Data, Chair J. Ullmann

- 14:00 **Present and future research at DANCE**
M. Jandel
- 14:30 **New measurements of the $^{239}\text{Pu}(\text{n},\gamma)$ cross section**
S. Mosby
- 15:00 **Detector-response correction of two-dimensional γ -ray spectra from neutron capture**
G. Rusev
- 15:20 **Enhancing the Detector for Advanced Neutron Capture Experiments**
A. Couture
- 15:40 **Nuclear level density predictions**
T. von Egidy
- 16:00 **Break**

Session 25 – Room 120: Nuclear Structure/Astrophysics/Reactions, Chair V. Werner

- 16:30 **Studies of K-Isomers in Trans-Fermium Nuclei near the N=152 Sub-Shell Closure**
F.G. Kondev
- 17:00 **p -process nucleosynthesis via proton-capture reactions in thermonuclear supernovae explosions**
A. Endres
- 17:20 **Fission study by prompt gamma-ray spectrometry**
T. Materna
- 17:40 **Reference Database for Reaction Gamma-ray Data (Book of Abstracts – Session 32)**
P. Dimitriou

Session 26 – Room 028: Techniques/Reactions, Chair E. Litvinova

- 16:30 **High-Resolution Laser Spectroscopy for Nuclear-Structure Studies**
D.T. Yordanov
- 17:00 **Photon Strength Functions and Nuclear Level Densities in Gd Nuclei from Neutron Capture Experiments**
J. Kroll
- 17:20 **The statistical properties of Sn-isotopes studied with the Oslo-method**
G. M. Tveten
- 17:40 **Scissors mode in $^{162,164}\text{Dy}$ from (n,γ) reactions**
S. Valenta

Friday, 29.08.2014

Session 27 – Room 120: Nuclear structure/Applications, Chair J. Hardy

- 08:30 **Laser spectroscopy of neutron deficient Francium isotopes at TRIUMF**
M. R. Pearson
- 09:00 **New results from laser spectroscopy**
K. T. Flanagan
- 09:30 **Measurements of correlations in beta-decay using laser and ion traps**
D. Melconian
- 10:00 **Development of medicine-intended isotopes production technology at Yerevan Physics Institute**
A. Avetisyan
- 10:30 **Break**

Session 28 – Room 028: Nuclear Astrophysics, Chair D. Bemmerer

- 08:30 **Search for Supernova-produced ^{60}Fe in the Earth's Fossil Record**
S. Bishop
- 09:00 **Critical Nuclear Physics in Nucleosynthesis**
C. Frohlich
- 09:30 **Hydrogen and Helium Burning in Type I X-Ray Bursts: Experimental Results and Future Prospects**
C. M. Deibel
- 10:00 **Measurements of the $^{12}\text{C}+^{12}\text{C}$ fusion reaction for astrophysics: current challenges and future outlook**
B. Bucher
- 10:30 **Break**

Session 29 – Room 120: Nuclear Structure, Chair A. Garnsworthy

- 11:00 **VITO – Versatile Ion-polarized Techniques On-Line at ISOLDE-CERN**
R. Garcia Ruiz (Book of Abstracts – Session 14)
- 11:30 **Do nuclei go pear-shaped? Coulomb excitation of ^{220}Rn and ^{224}Ra at REX-ISOLDE (CERN)** (Book of Abstracts – Session 19)
M. Scheck
- 12:00 **Overview of In-Beam Gamma-Ray Spectroscopy at the RIBF**
P. Doornenbal (Book of Abstracts – Session 25)
- 12:30 **Lunch**

Session 30 – Room 028: Nuclear Reactions/Astrophysics, Chair G. Rusev

- 11:00 **Nuclear reaction studies with GRETINA at the NSCL**
K. Wimmer
- 11:30 **Decay spectroscopy of exotic nuclei with EURICA spectrometer at RIBF**
S. Nishimura
- 12:00 **Test of IMME in fp shell via direct mass measurements of $T_z = -3/2$ nuclides**
Y. H. Zhang (Book of Abstracts – Session 29)
- 12:30 **Lunch**

Session 31 – Room 120: Nuclear Structure/Astrophysics, Chair M. Beard

- 14:00 **Observation of low-lying resonances in the quasicontinuum of $^{195,196}\text{Pt}$ and enhanced astrophysical reaction rates**
F. Giacoppo
- 14:30 **Investigation of dipole strength up to the neutron-separation energy at ELBE**
R. Massarczyk
- 15:00 **Study of the isospin character of 1^- states using hadronic probes at intermediate energies**
V. Derya
- 15:20 **γ -ray strength functions of ^{138}La and ^{139}La and their impact on galactic production of ^{138}La**
B.V. Kheswa
- 15:40 **Decay properties of low-lying dipole strength in Sn isotopes**
D. Symochko
- 16:00 **Break**

Session 32 – Room 028: Techniques/Data, Chair M. Krticka

- 14:00 **DESCANT and β -delayed neutron measurements at TRIUMF**
V. Bildstein
- 14:30 **In-Trap Decay Spectroscopy with the TITAN Facility at TRIUMF**
K.G. Leach
- 15:00 **Measurement of the prompt fission gamma-ray emission from fast neutron induced fission of ^{235}U and ^{238}U with LICORNE**
P. Halipré
- 15:20 **Improved Neutron Capture Gamma-Ray Data and Evaluation**
B. W. Sleaford
- 15:40 **Triaxiality of heavy nuclei as an essential feature to predict radiative capture**
E. Grosse (Book of Abstracts – Session 25)
- 16:00 **Break**

Session 33 – Room 120

- 16:30 **Closing**