PARALLEL SESSIONS

DURATION OF PRESENTATIONS:

- **Presenter’s name in bold face:** 20+5 mins
- **Contributed:** 15+4 mins

**Few-body aspects of atomic and molecular physics** [FB_A&M]

Session 1
J-P. Karr  Accurate solutions of the three-body Coulomb problem, and applications to molecular QED
E. Kolganova  Van der Waals three-body systems, potentialities for Efimov state observations
- Ultracold three-body rare gas atomic clusters (205140)  A. Korobitsin
- Three-electron bound states in conventional superconductors (198752)  A. Sanaye
- Analytic model of a multi-electron atom (201427)  O. Skoromnik
- Energy spectra of excitons in square quantum wells (204833)  S. Yakovlev

Session 2
A. Mery  Fragmentation dynamics of atomic and molecular dimers
- Electron impact ionization of molecules for different momentum transfers (205824)  L.U. Ancarani
- Discrete scaling and scattering properties from atom-dimer collision (202022)  L. Tomio
- Formation of few-electron complexes (193508)  H. Klar

Session 3
- M. Safronova  Relativistic high-precision methodologies for atomic calculations
- Y. Nagashima  Positronium negative ions: the simplest three body state composed of a positron and two electrons
  - A three-body system in two dimensions (205748)  M. Zimmermann
  - Trions in three-, two- and one-dimensional materials (204732)  R. Kezerashvili

Session 4
Bing Zhu  Exploring few- and many-body physics with an ultracold Bose-Fermi mixture of a large mass imbalance
- Probing three-body collisions induced by a charge impurity in an ultracold gas (205811)  H. da Silva Jr
- Few-body interactions in a cold Rydberg gas (205614)  P. Cheinet
- Potential splitting approach for atomic and molecular systems (205207)  E. Yarevsky

Session 5
A. Browaeys  Experimental many-body physics using arrays of individual atoms
Kang-Kuen Ni  Building single molecules - collisions and reactions of two atoms
- Low-dimensional few-body processes in confined geometry of atomic and hybrid atom-ion traps (205525)  V. Melezhik
- Three two-species fermions with contact interactions (204638)  A. Malykh
Hadron physics and related high-energy physics  [FB_Hadron]

Session 1
C. Lorcé  The origin of the nucleon mass
- Energy-momentum tensor for unpolarized proton target (205718)  A. Trawiński
- The pion as a tool for discovering new physics (205298)  L. Doria
- The pseudoscalar glueball puzzle (205571)  Qiang Zhao
- Light hadron spectroscopy at BESIII (205316)  S. Fang
- Meson-baryon scattering in Extend-on-mass-shell scheme at O(p³) (205359)  J. Lu

Session 2
T. Peña  Relativity in few-hadron systems: analysis of baryon electromagnetic transition form factors in the Covariant Spectator Theory
- Masses and structure of heavy quarkonia and heavy-light mesons in a relativistic quark model in Minkowski space (205723)  A. Stadler
- On the inversion of the Nakanishi Integral Representation for relativistic bound state problems in Minkowski space (204574)  T. Frederico
- Relativistic effects in non-relativistic calculations of electroweak cross sections (204313)  G. Orlandini
- Bethe-Salpeter approach to three-body bound states with zero-range interaction (203932)  E. Ydrefors
- Relativistic Faddeev Calculation for Nd Scattering with Kharkov Potential (199113)  H. Kamada

Session 3
M. Doering  Baryon resonances with dynamical coupled channels theory
- Narrow resonance N*(1685) and eta photoproduction (204522)  Jung Min Suh
- Description of the Zc exotic states in a quark model coupled-channels calculation (202668)  F. Fernandez
- $\pi J/\psi D$ potential described by the quark exchange diagram (204977)  Y. Yamaguchi
- Exotic quantum states for charmed baryons at finite temperature (192972)  Pengfei Zhuang
- Few-body methods and results for hadrons in-medium (204048)  Yuxin Liu

Session 4
G. Krein  Nuclear-bound heavy-flavor hadrons
- Hidden-charm and bottom meson-baryon molecules coupled with five-quark states (204427)  A. Giachino
- A meson-baryon molecular interpretation for some Q_c^0 excited states (198766)  G. Montaña
- Threshold effects and the line shape of the X(3872) in Effective Field Theory (203933)  M. Schmidt

Session 5
Hyun-Chul Kim  Excited Omega_cs as heavy pentaquarks
- Pion-cloud contribution to the $S\rightarrow\Delta$ transition form factors (205690)  Ju-Hyun Jung
- Pion effects in $S\Delta$ masses and strong form factors (205200)  W. Plessas
- Mesons studies with a contact interaction (202502)  M.A. Bedolla
Session 6
M. Defurne  Accessing the generalized parton distributions in the valence region at Jefferson Laboratory
C. Mezrag  Parton distribution amplitudes: revealing diquarks in the proton and Roper resonance
W. de Paula  Pion valence momentum distributions: response to massive effective gluons
- Poincare’ covariant light-front spectral function and transverse momentum distributions (205249)
  E. Pace

Strange and exotic matter including hypernuclear physics  [FB_Exotic]

Session 1
T. Saito  Hypernuclear spectroscopy with heavy ion beams: the present status and the perspective
- Hyperon- and hypernuclear physics with PANDA at FAIR (204831) K. Schoenning
- Production of hypernuclei and strange particles in spallation reactions at a few GeV using an intranuclear cascade approach (199443) J.-Ch. David
- Search for the eta-mesic helium in proton-deuteron and deuteron-deuteron reactions (196370)
  M. Skurzok
- Studies of the $\bar{K}NN$ bound state via the exclusive analysis of the in-flight $(K^\pm, n)$ reaction a J-PARC (205171) T. Yamaga
- Quasi-bound state in the $\bar{K}NNN$ system (204314) N. Shevchenko

J. Haidenbauer  Baryon-baryon interaction in chiral effective field theory
- $B\bar{\Lambda}(\Lambda^5\Lambda\Lambda\Lambda\Lambda)$ from short range effective theory (202622) L. Contessi
- Construction of a local $K\Lambda\pi\Sigma\pi$ potential and composition of the $\Lambda(1405)$ (205154) T. Hyodo
- Are the chiral based $\bar{K}N$ potentials really energy-dependent? (201458) J. Revai

Session 3
E. Liénard  Probing the Standard Model with beta-decay experiments
- Zero-Range Effective Field Theory for Resonant Wino Dark Matter (205826) E. Braaten
- Time Reversal Violation in two and three Nucleon Systems (205850) A. Gnech
- Few Nucleon Experiments in The Hadronic Weak Interaction (205873) J. Fry

Session 4
J. Kuboś  Studies of hyperon production in HADES
- Excitation of baryon resonances in isobaric charge-exchange reactions of heavy-exotic nuclei (205663) J.L. Rodriguez Sanchez
- In-medium properties of SU(3) baryons (204530) Kihoon Hong
- Universal physics of two neutrons and one flavored meson in pionless effective theory (203502)
  U. Raha
**Few-body methods in nuclear physics and astrophysics + Few-nucleon systems including QCD inspired approaches**  [FB_Nucl&QCD]

**Session 1**
P. Descouvemont  Four-body effects in nucleus-nucleus scattering
- Astrophysical S-factor of the direct \( \alpha(d, \gamma)^6\text{Li} \) capture reaction in a three-body model (193447) D Baye
- Direct measurement of the \(^{13}\text{C}(n,\alpha)^{10}\text{Be}\) reaction at LUNA (198578) G.F. Ciani
- A new measurement of the \(^3\text{H}(p, \gamma)^3\text{He}\) cross section in the BBN energy range at LUNA (205709) F. Cavanna
- S-factor and scattering-parameters from \(^3\text{He}(\alpha, \gamma)^4\text{He}\) data (204459) D Phillips
- Observation of new neutron resonances in \(^{17,19}\text{C}\) (205573) Y. Sato

**Session 2**
O. Sorlin  Evolution of neutron correlations when reaching the drip line
- Exploring the p-n interaction close to the drip-line in the fluorine isotopic chain (205279) A. Revel
- A few-body analysis for the proton-neutron correlation in N=Z nuclei (205242) H. Masui
- The first unbound states in the A=9 mirror nuclei \(^9\text{B}\) and \(^9\text{Be}\) (205197) M. Odsuren
- Boron isotopes at the dripline: the \(^{19}\text{B}\) case (200600) J. Gibelin
- Glauber model analysis for the \(^{22}\text{C}\) nuclear radius (203632) W. Horiuchi

**Session 3**
Y. Kondo  Experimental studies of unbound neutron-rich nuclei
- Theoretical studies of few-body phenomena in light exotic nuclei (204687) L. Grigorenko
- Search for dineutron correlation in borromean halo nuclei (198591) A. Corsi
- Three-body description of 2n-halo and unbound 2n-systems: \(^{22}\text{C}\) and \(^{26}\text{O}\) (196481) J. Singh
- Two-neutron halo state of \(^{15}\text{B}\) Around 3.48 MeV by a three-body model (203641) J. Singh
- Two-nucleon emitters within a pseudostate approach (205640) J. Casal

**Session 4**
J. Rotureau  Combining structure and reactions: construction of microscopic optical potentials
- Ab initio folding potentials for proton-nucleus scattering based on NCSM nonlocal one-body densities (200456) Ch. Elster
- Description of scattering reactions of deuteron projectiles using the Gamow Shell Model with the Resonating Group Method (205360) N. Michel
- A new ab initio approach for nuclear reactions based on the symmetry-adapted No-core Shell Model (205872) A. Mercenne
- Polarisabilities from Compton scattering on \(^3\text{He}\) - and beyond (204745) H. Griesshammer
- Three-body approach to deuteron-\(\alpha\) scattering and bound state using realistic forces in a separable or non-separable representation (205513) L. Hlophe

**Session 5**
A. Volya  Microscopic studies of \(\alpha\) clustering in light nuclei
- The Hoyle Family: precision break-up measurements to explore nuclear \(\alpha\)-condensates (205964) R. Smith
- Background free measurement of the \(\gamma\)-decay of the 17.64MeV \((1^+\) state in \(^8\text{Be}\) (205651) H.O.U. Fynbo
- Investigating \(^{16}\text{O}\) above the 4-\(\alpha\) breakup threshold (205757) J.A. Swartz
- Tensor correlations in $\alpha$ clustering studied with antisymmetrized quasi cluster model (203677) Y. Kanada-En’yo
- Structure of Beryllium isotopes beyond the neutron dripline (204692) B. Monteagudo

Session 6
G. Hupin  
- $p$-shell structure through the looking-glass of ab initio transfer reactions
- How to use renormalization group analysis in lattice nuclear Effective Field Theory (205600) K. Harada
- Low-Energy QCD Research at TUNL (205882) C. Howell
- Ab initio calculations for $p$-shell nuclei with Daejeon16 (202559) Y. Kim
- Single-state HORSE method for description of resonant states within the nuclear Shell Model (203386) A. Mazur
- Properties of light lattice nuclei from Effective Field Theory (205864) N. Barnea

Session 7
E. Piasetzky  
- Components of polarization-transfer to a bound proton in a deuteron measured by quasi-elastic scattering
- Measurement of $^3$He analyzing power for $p$-$^3$He elastic scattering at 70 MeV (205653) A. Watanabe
- Complete set of deuteron analyzing powers for $d$-$p$ elastic scattering at 70--300 MeV/nucleon and Three-nucleon forces (205209) K. Sekiguchi
- Three-nucleon force studies in p-$d$ break-up reaction with BINA at 190 MeV (205130) M. Mohammadi-Dadkan
- Differential cross section for deuteron breakup in collision with proton - measurements at intermediate energies (205739) E. Stephan
- Nuclear short-range correlations - The contact relations (201133) R. Weiss

Session 8
Y. Ikeda  
Hadron interactions from lattice QCD - application to hadron resonances
T. Yamazaki  
Relation between scattering amplitude and Bethe-Salpeter wave function inside interaction range
E. Berkowitz  
Towards Grounding Nuclear Physics in QCD
K. Hadjiyiannakou  
Nucleon structure from LQCD
- Dibaryon candidates in decuplet baryons from lattice QCD (205594) S. Gongyo

Session 9
Ch. Greene  
Adiabatic hyperspherical picture of 3n and 4n states
J.E. Lynn  
Few neutron resonances from chiral Effective Field Theory
E. Hiyama  
Structure of tetra neutron system
M. Viviani  
Four-body continuum with 3N-forces
- Tetranucleon resonance in the single-state HORSE approach (203027) A. Shirokov

Session 10
S. Shimoura  
Tetra-neutron system populated by RI-beam induced reactions
Z. Yang  
Study of multineutron systems with SAMURAI
- High-precision nucleon-nucleon potentials from chiral EFT (205553) P. Reinert
- Five-nucleon systems with an hyperspherical harmonic method (205796) J. Dohet-Eraly
Session 11

Y. Maeda  Experimental analysis of few-body physics
H. Witała  Three-nucleon continuum reactions with semilocal coordinate-space regularized chiral forces
- Few-nucleon system dynamics studied via deuteron-deuteron collisions at 160 MeV (205037)  I. Ciepał
- Measurement for p–³He elastic scattering with a 65 MeV polarised proton beam (205650)  S. Nakai

Session 12

A. Deltuva  Collisions in few-neutron systems
M. Hussein  Inclusive breakup reaction of a two-fragment projectile on a two-fragment target:
A genuine four-body problem
- Three-nucleon force contribution to the distorted-wave theory of (d,p) reactions (203231)  N. Timofeyuk
- Cluster configuration effects in elastic scattering of light proton and neutron-rich nuclei (205822)  V. Guimaraes

Session 13

M. Mihovilovic  Electron scattering experiment on light systems
- Electromagnetic sum rules in light nuclei (204570)  S. Bacca
- Momentum distributions and short-range correlations in ³He with chiral potentials (201762)  L.E. Marcucci
- Elastic α–¹²C scattering at low energies with the bound states of ¹⁶O in effective field theory (202163)  S.-I. Ando

Interdisciplinary aspects of few-body physics and techniques  [FB_Interdiscip]

Session 1

P. Naidon  Tetramers of 2+2 bosons
- Universality and the Coulomb interaction (204681)  Ch. Schmickler
- Universality in few-body systems (205853)  P. Stipanović
- Universal relations for heteronuclear few-body systems (205738)  L. Platter
- Universal Phillips lines for identical bosons and particles of different masses (204987)  V. Roudnev
- Fate of the neutron-deuteron virtual state as an Efimov level (205331)  G. Rupak

Session 2

W. Polyzou  Scattering using real-time path integrals
- Nuclear reaction near the Three-Body Thresholds (204947)  S. Oryu
- Hyperspherical Harmonics Method with Particle Excitation Degrees of Freedom (205414)  W. Leidemann
- Conformality lost in Efimov Physics (204912)  A. Mohapatra
- Neutron matter in the unitary limit with implicit renormalization of short range interactions (205109)  V Timoteo
- Transition exponent and condensate fluctuation of mesoscopic Bose-Einstein condensate in anharmonic trap (205588)  M. Lekala
Session 3
A. Kievsky  Bosonic drops with two- and three-body interactions close to the unitary limit
- The problem of cluster separability in relativistic few-body systems (197800) W. Schweiger
- Asymmetric regularization and the universal character of the helium-4 spectrum (206772) J. Kirscher
- A simple tool to study many-body forces (200138) C. Semay

Session 4
Chen Ji  Ab initio calculation of nuclear-structure effects in muonic atoms
- Some new ideas for the proton radius puzzle (205716) Ch. Allton
- The deuteron-radius puzzle is alive: a new analysis based on chiral EFT theory (204142) O.J. Hernandez
- Dipole-dipole dispersion interactions between neutrons (205870) R. Higa