PARALLEL SESSIONS

DURATION OF PRESENTATIONS: [Names of presenters listed]

- **BOLD**: 20+5 mins
- Contributed: 15+4 mins

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

**Session 1 (Long)**

**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
- Analytic model of a multi-electron atom (201427) **O. Skoromnik**
- Energy spectra of excitons in square quantum wells (204833) **S. Yakovlev**
- Ultracold three-body rare gas atomic clusters (205140) **A. Korobitsin**

**Session 2 (Short)**

**A. Mery** Fragmentation dynamics of few-body atomic systems
- 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**
- A three-body system in two dimensions (205748) **M. Zimmermann**

**Session 3 (Short)**

**M. Safronova** Relativistic high-precision methodologies for atomic calculations
- Anyons from Three-Body Hard-Core Interactions in One Dimension (205858) **N. Harshman**
- Trions in three-, two- and one-dimensional materials (204732) **R. Kezerashvili**
- Transition exponent and condensate fluctuation of mesoscopic Bose-Einstein condensate in anharmonic trap (205588) **M. Lekala**

**Session 4 (Short)**

**Bing Zhu** Few-body physics in an ultracold Li-Cs mixture
- Probing three-body collisions induced by a charge impurity in an ultracold gas (205811) **H. da Silva Jr**
- Low-dimensional few-body processes in confined geometry of atomic and hybrid atom-ion traps (205525) **V. Melezhik**
- Potential splitting approach for atomic and molecular systems (205207) **E. Yarevsky**

**Session 5 (Short)**

**Y. Nagashima** First atomic resonance in positronium negative ion, a fundamental 3-body problem
- Influence of the strong $\bar{p}(\mu^-)\bar{p}$ nuclear interaction on the rate of the low-energy three-body reaction between $\bar{p}(\mu^-)\bar{p}$ and $\bar{p}(\mu^-)$ (205818) **R. Sultanov**
- Formation of few-electron complexes (193508) **H. Klar**
- Three-electron bound states in conventional superconductors (198752) **A. Sanayeï**
Session 6 (Short)

A. Browaeys  
Optical manipulation of atoms in optical tweezers: Rydberg excitation and blockade

Kang-Kwen Ni  
Assembling single molecules in a tweezers, starting from a pair of atoms trapped in a tweezer
- Few-body interactions in a cold Rydberg gas  
P. Cheinet
- Three two-species fermions with contact interactions  
A. Malykh

Hadron physics and related high-energy physics  [FB_Hadron]

Session 1 (Long)

C. Lorcé  
The origin of nucleon mass
- Light Hadron Spectroscopy at BESIII  
S. Fang
- The Pion as a tool for discovering new physics  
L. Doria
- The pseudoscalar glueball puzzle  
Qiang Zhao
- The proton form factors obtained in double-polarization experiments  
V. Punjabi
- Energy-momentum tensor for unpolarized proton target  
A. Trawiński

Session 2 (Long)

T. Peña  
Relativistic calculations of hadrons and their photo-couplings
- Masses and structure of heavy quarkonia and heavy-light mesons in a relativistic quark model in Minkowski space  
A. Stadler
- On the inversion of the Nakanishi Integral Representation for relativistic bound state problems in Minkowski space  
T. Frederico
- Relativistic effects in non-relativistic calculations of electroweak cross sections  
G. Orlandini
- Bethe-Salpeter approach to three-body bound states with zero-range interaction  
E. Ydrefors
- Relativistic Faddeev Calculation for Nd Scattering with Kharkov Potential  
H. Kamada

Session 3 (Long)

M. Doering  
Baryon resonances with dynamical coupled channels theory
- Narrow resonance $N^*(1685)$ and eta photoproduction  
Jung Min Suh
- Description of the Zc exotic states in a quark model coupled-channels calculation  
F. Fernandez
- $\pi J/\psi-D\bar{D}^\ast$ potential described by the quark exchange diagram  
Y. Yamaguchi
- Exotic Quantum States for Charmed Baryons at Finite Temperature  
Pengfei Zhuang
- Few-Body Methods and Results for Hadrons In-Medium  
Yuxin Liu

Session 4 (Short)

G. Krein  
Heavy flavor hadrons
- Hidden-charm and bottom meson-baryon molecules coupled with five-quark states  
A. Giachino
- A meson-baryon molecular interpretation for some $Q_c^0$ excited states  
G. Montaña
- Threshold Effects and the Line Shape of the $X(3872)$ in Effective Field Theory  
M. Schmidt
Session 5 (Short)

Hyun-Chul Kim  Masses and decay widths of heavy baryons in a mean-field approach
- Pion-cloud contribution to the SN→Δ transition form factors (205690)  Ju-Hyun Jung
- Pion effects in SN and SN→Δ masses and strong form factors (205200)  W. Plessas
- Mesons studies with a contact interaction (202502)  M.A. Bedolla

Session 6 (Short)

M. Defurne  Deeply virtual Compton scattering in the valence sector
C. Mezrag  Nucleon distribution amplitudes
W. de Paula  Pion valence momentum distributions: response to massive effective gluons

Strange and exotic matter including hypernuclear physics [FB_Exotic]

Session 1 (Long)

T. Saito  Production of hypernuclei in heavy-ion collisions. Lifetime of the hypertriton
- 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 \(K^-n\) reaction a J-PARC (205717)  T. Yamaga
- Quasi-bound state in the \(\bar{K}NN\) system (204314)  N. Shevchenko

Session 2 (Short)

J. Heidenbauer  Hyperon-nucleon interaction in EFT
- B$\Lambda$($^5\Lambda$He) from short range effective theory (202622)  L. Contessi
- Construction of a local Kbar N-pi Sigma-pi Lambda 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 (Short)

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
**Few-body methods in nuclear physics and astrophysics + Few-nucleon systems including QCD inspired approaches** [FB_Nucl&QCD]

**Session 1 (Long)**

**P. Descouvemont**

Four-body continuum effects in nucleus-nucleus scattering
- Astrophysical S-factor of the direct alpha(d; gamma)6Li capture reaction in a three-body model (193447) E.M. Tursunov
- Direct measurement of the 13C(α,n)16O reaction at LUNA (198578) G.F. Ciani
- A new measurement of the 2H(p,g)3He cross section in the BBN energy range at LUNA (205709) F. Cavanna
- S-factor and scattering-parameters from He-3(alpha, gamma) data (204459) D. Phillips
- Observation of new neutron resonances in 17,19C (205573) Y. Sato

**Session 2 (Long)**

**O. Sorlin**

Probing nucleon-nucleon interactions in neutron-rich nuclei
- 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 9B and 9Be (205197) M. Odsuren
- Boron isotopes at the dripline: the 19B case (200600) J. Gibelin
- Glauber model analysis for the 22C nuclear radius (203632) W. Horiuchi

**Session 3 (Long)**

**Y. Kondo**

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: 22C and 26O (196481) J. Singh
- Structure of Beryllium isotopes beyond the neutron dripline (204692) B. Monteagudo
- Two-nucleon emitters within a pseudostate approach (205640). J. Casal

**Session 4 (Long)**

**J. Rotureau**

Optical potentials from first principles
- Ab initio folding potentials for proton-nucleus scattering based on NCSM nonlocal one-body densities (200456) C. 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
- Cluster configuration effects in elastic scattering of light proton and neutron-rich nuclei (205822) V. Guimaraes
- Elastic $^\alpha$-C scattering at low energies with the bound states of $^\alpha^\{16\}$SO in effective field theory (202163) S.-I. Ando
Session 5 (Long)

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 γ-decay of the 17.64MeV (1⁺) state in ⁸Be (205651) H.O.U. Fynbo
- Investigating ¹⁶O 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
- A CDCC extension to microscopic three-cluster projectiles (202986) E. Pinilla

Session 6 (Long)

G. Hupin  Ab initio structure and reactions of light nuclei
- 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 (Long)

E. Piasetzky  Components of polarization-transfer to a bound proton in a deuteron measured by quasi-elastic scattering
- Three-nucleon continuum reactions with semilocal coordinate-space regularized chiral forces (199650) H. Witała
- Three-nucleon force studies in p-d break-up reaction with BINA at 190 MeV (205130) M. Mohammadi-Dadkan
- Few-Nucleon System Dynamics Studied via Deuteron-Deuteron Collisions at 160 MeV (205037) I. Ciepał
- 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 (Long) - Special session on LQCD

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 (Long) - Special session on multineutrons

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  4-body continuum with 3N-forces
- Tetraneutron resonance in the Single-State HORSE approach (203027) A. Shirokov
Session 10 (Short) - *Multineutrons (cont)*
S. Shimoura  Tetra-neutron system populated by RI-beam induced reactions
Z. Yang  Study of multineutron systems with SAMURAI
- Five-nucleon systems with an hyperspherical harmonic method (205796)  *J. Dohet-Eraly*
- High-precision nucleon-nucleon potentials from chiral EFT (205553)  *P. Reinert*

Session 11 (Short)
Y. Maeda  Experimental analysis of few-body physics
- Measurement of $^3$He analyzing power for p-$^3$He elastic scattering at 70 MeV (205653).  *A. Watanabe*
- Measurement for p-$^3$He elastic scattering with a 65 MeV polarised proton beam (205650)  *S. Nakai*
- Complete set of deuteron Analyzing Powers for $dp$ Elastic Scattering at 70--300 MeV/nucleon and Three-Nucleon Forces (205209)  *K. Sekiguchi*

Session 12 (Short)
A. Deltuva  Few-body reactions in light nuclei
- Three-body approach to deuteron-alpha scattering and bound state using realistic forces in a separable or non-separable representation (205513)  *L. Hlophé*
- Inclusive breakup reaction of a two-fragment projectile on a two-fragment target: A genuine four-body problem (204476)  *M. Hussein*
- Three-nucleon force contribution to the distorted-wave theory of (d,p) reactions (203231)  *N. Timofeyuk*

Session 13 (Short)
M. Mihovilovic  Electron scattering experiment on light systems
- Electromagnetic sum rules in light nuclei (204570)  *S. Bacca*
- Polarisabilities from Compton Scattering on $^3$He -- and Beyond (204745)  *H. Griesshammer*
- Momentum Distributions and Short-Range Correlations in 3He with Chiral Potentials (201762)  *L.E. Marcucci*

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

Session 1 (Long)
P. Naidon  From Yukawa to Efimov attraction
- Universality and the Coulomb interaction (204681)  *C.H. 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 (Long)
W. Polyzou  Scattering using real-time path integrals
- Equivalence between the complex rotation resonances and scattering matrix resonances (205830)  *A. Motovilov*
- Complex-Range Gaussians as a Basis for Treatment of Charged Particle Scattering (199036)  *D. Sailaubek*
- Hyperspherical Harmonics Method with Particle Excitation Degrees of Freedom (205414)  *W. Leidemann*
- Nuclear Reaction near the Three-Body Thresholds (204947)  *S. Oryu*
- Conformality lost In Efimov Physics (204912)  *A. Mohapatra*
Session 3 (Short)
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 (Short)
Chen Ji  Nuclear structure effects in muonic atoms
- Some new ideas for the proton radius puzzle (205716) C. 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