



## Welcome to the 24<sup>th</sup>

### European Conference on Few-Body Problems in Physics

#### EFB24

The European Conference on Few-Body Problems in Physics is the 24<sup>th</sup> in a series held every three years that began in 1971 in and more recently took place in Aarhus (2016), Krakow (2013), Salamanca (2010) and Pisa (2007). The conference is organized and hosted by the Department of Physics of the University of Surrey which is located in Guildford (UK).

The conference aims to provide an opportunity to present and discuss recent developments in the field of few-body systems - that is, systems which can be understood in terms of a few effective degrees of freedom. This Conference will focus on recent developments in the field of few-body systems, in the following areas:

- Hadrons and particles
- Nuclei and hypernuclei
- Electroweak processes
- Atoms and molecules
- Cold atoms and quantum gases
- Few-body methods

The EFB24 is sponsored by



## Committees

### The International Advisory Committee:

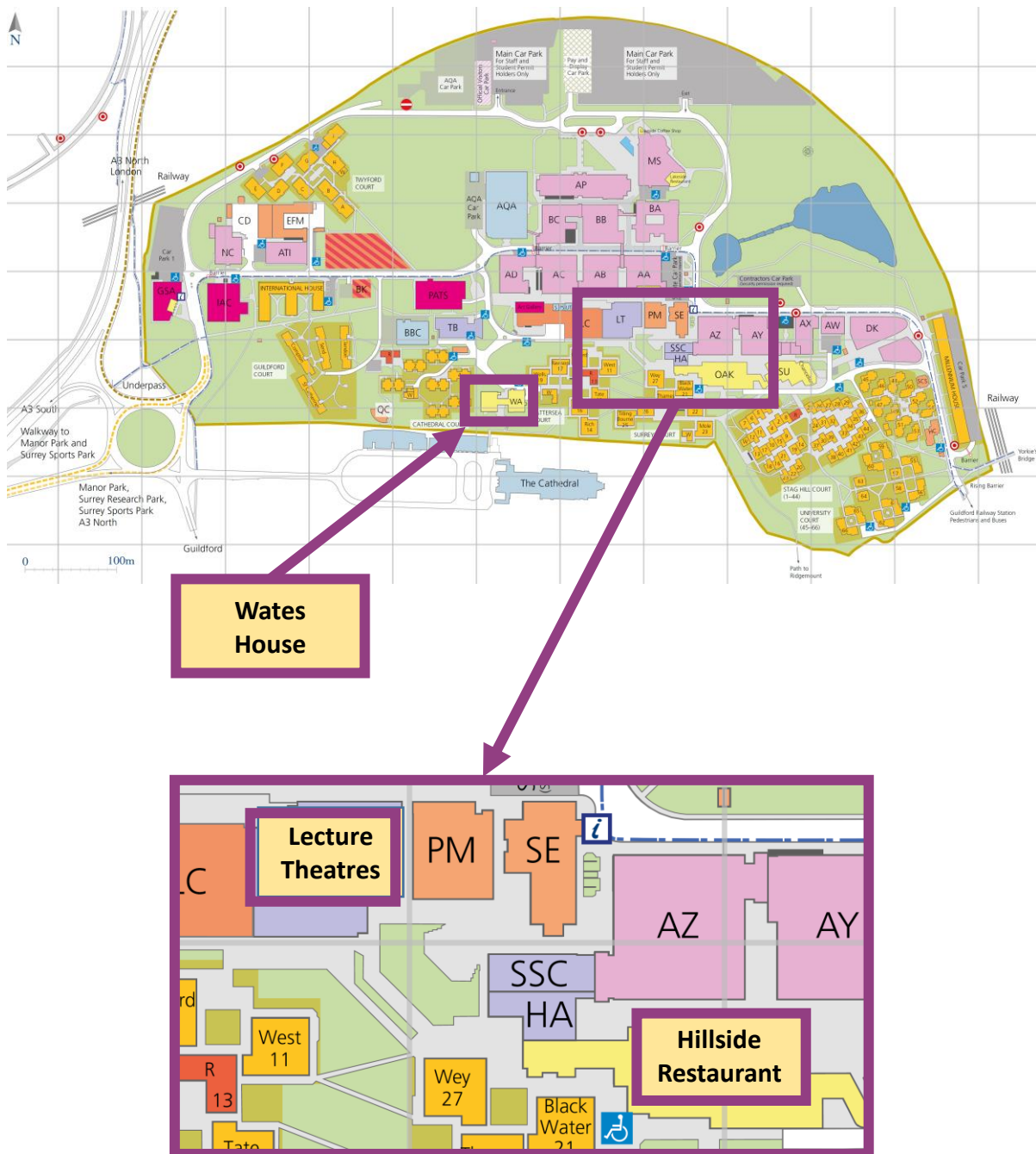
- N. Barnea (Israel)
- M. Birse (UK)
- C. Bertulani (USA)
- J. Carbonell (France)
- X. Cui (China)
- A. Deltuva (Lithuania )
- E. Epelbaum (Germany)
- D. Fedorov (Denmark)
- F. Fernández González (Spain)
- T. Frederico (Brazil)
- C. Greene (USA)
- J. Haidenbauer (Germany)
- M. L. Lekala (South Africa)
- N. Kalantar-Nayestanaki (Netherlands)
- A. Kadyrov (Australia)
- A. Kievsky (Italy)
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- N. Orr (France)
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- W. Plessas (Austria)
- M. Piarulli (USA)
- J.-M. Richard (France)
- P. Schmelcher (Germany)
- K. Sekiguchi (Japan)
- N. Shevchenko (Czech Republic)
- W. Tornow (USA)
- K. Varga (USA)
- D. Watts (UK)
- H. Witała (Poland)

### The local organizing committee:

- Natasha Timofeyuk (Chair)
- Jim Al-Khalili
- Carlo Barbieri
- Wilton Catford
- Alexis Diaz-Torres
- Eran Ginossar
- Konstantin Litvinenko
- Arnau Rios
- Paul Stevenson

## Conference Venue

The conference, registration, coffee breaks, poster session and public lecture will take place in the Lecture Theatre Block of the University of Surrey which is located in the centre of the Stag Hill Campus. Lunches will be provided at the university canteen, the “Hillside Restaurant”. Registration at the venue will be open every morning 30 minutes before the conference starts. The registration on Sunday and the Welcome Reception will take place in the Wates House.





## Practical Information

### Registration Desk

The registration desk will be open from 8:30 till 9:00 and at coffee breaks in the lower concourse of the Lecture Theatre Block. In addition, it will be open during plenary sessions on Monday and Tuesday.

### Emergency Contacts

Most international mobile phones will recognize 999 or 112 as emergency phone numbers for fire, police and ambulance.

University of Surrey security service emergency number 01483 683333

Urgent medical problems: Accident and Emergency Department of the Royal Surrey County Hospital is a 20 minute walk from the conference venue opposite the Manor Park campus. A bus service between the university and the hospital is available.

### Internet Access/Wi-Fi Connection

Wireless internet access is available throughout the University of Surrey campus.

If your institution supports eduroam you should connect to the eduroam network with the username and password from your home institution.

Alternatively, the public network “\_The Cloud” is available.

### Information for Speakers

We will use university computers available in the Lecture Theatres. The university uses Microsoft Windows. Please provide your slides by uploading the file directly to Indico by 8:30 am on the day before your presentation. To do this please go to “My contributions” where “Presentation materials” can be added at the bottom of the page. If you have any problems in uploading your file please contact [efb24@surrey.ac.uk](mailto:efb24@surrey.ac.uk).

### Poster Exhibition

Posters will be displayed in the lower concourse of the Lecture Theatre Block on Thursday from 8:30. The poster session will take place from 18:30 until 19:30. Conference participants are expected to vote for the best poster. The three posters with the highest scores will be awarded prizes.

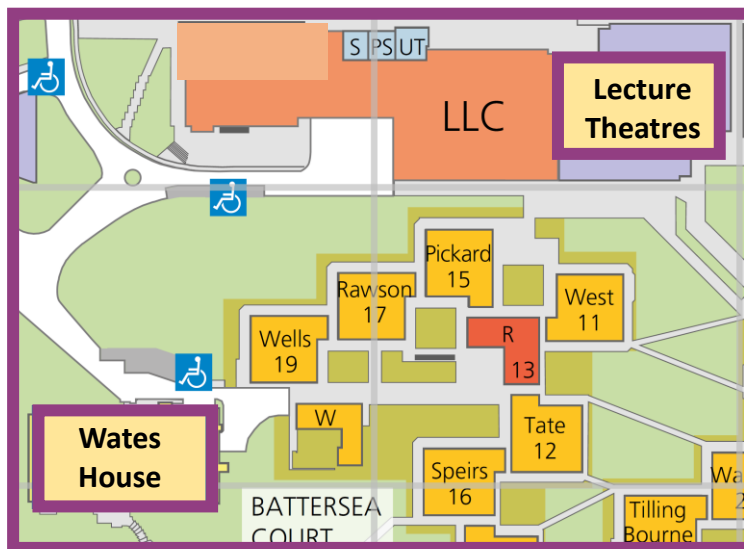
### Proceedings

Proceedings for the conference will be published in the open access journal SciPost Proceedings. The deadline for submission of proceedings articles is 15<sup>th</sup> October 2019. Full instructions, and the LaTeX template for proceedings articles is available from the conference website (or at <https://cutt.ly/efb24>).

## Social Events

### Welcome Reception – Sunday, 1 September

The local organizing committee is pleased to welcome all the participants and accompanying persons upon their arrival to the 24<sup>th</sup> European Conference on Bew-Body Problems in Physics. The welcome reception will take place at **Wates House** between 17:00 and 20:00. Participants will be able to register and those who have reservation for rooms on campus during registration via the online store will get their keys.



### Excursion to Hampton Court and Conference Dinner – Wednesday, 4 September

The visit to the Hampton Court – a royal palace associated with several Tudor and Stuart monarchs, starting from Henry the VIII, and historical events – will take place on Wednesday the 4<sup>th</sup> of September. The coaches will leave the University of Surrey at 14:30.

The Hampton Court is open for visitors until 18:00.

Excursion will be followed by a pre-dinner drinks reception and the dinner in the Garden Room at Hampton Court. The Garden Room will be open for us from 17:30. The dinner will start at 18:30.

The coaches will leave Hampton Court to return to the University of Surrey at 22:00.

<b>Plenary</b>			<b>Lecture Theatre D (9:00 – 13:00)</b>		<i>Chair: William Gelletly</i>
8:30	<b>Registration and morning coffee (lower concourse)</b>				
8:55	<b>Opening of the conference</b>				
9:00	<i>Observation of Efimov states in ultracold atoms</i>				<b>Cheng Chin</b>
9:35	<i>Exotic structures in exotic nuclei</i>				<b>Miguel Marques</b>
10:10	<i>Constraining Hyperon-Nucleon and Hyperon-Hyperon interactions with femtoscopy in ALICE</i>				<b>Andreas Mathis</b>
10:45	<b>Coffee break (lower concourse)</b>				
					<i>Chair: Deen Lee</i>
11:15	<i>Ultra cold chemistry using the R-matrix method</i>				<b>Jonathan Tennyson</b>
11:50	<i>Solutions of the Faddeev-Yakubovsky equations for five-nucleon systems</i>				<b>Rimantas Lazauskas</b>
12:25	<i>The molecular nature of some exotic hadrons</i>				<b>Angels Ramos</b>
13:00	<b>Lunch break (Hillside restaurant)</b>				

<b>Parallel</b>						<b>Lecture Theatre D (14:00 – 18:25)</b>		
						<b>Few-Nucleon Systems</b>		<i>Chair: Mantile Leslie Lekala</i>
14:00	<i>Investigations of the Few-Nucleon Systems within the LENPIC Project</i>						<b>Jacek Golak</b>	
14:30	<i>Tracing a few-fermion system inside the unitary window</i>						Alejandro Kievsky	
14:55	<i>Four-nucleon continuum: from near-threshold resonances to intermediate-energy collisions</i>						Arnoldas Deltuva	
15:20	<i>Derivation of relativistic Yakubovsky equations under Poincare invariance.</i>						Hiroyuki Kamada	
15:45	<b>Coffee break (lower concourse )</b>							
						<b>Few-Nucleon Systems</b>		<i>Chair: Kimiko Sekiguchi</i>
16:20	<i>Measurement of Spin Correlation Coefficients in <math>p</math>-<math>^3\text{He}</math> Scattering at 65 MeV</i>						Minami Inoue	
16:45	<i>Studies of the star configurations at intermediate energies with the use of the BINA detector</i>						Andrzej Gabriel Wilczek	
17:10	<i>Dynamical effects in deuteron-proton reaction at 100 MeV</i>						Izabela Skwira-Chalot	
17:35	<i>Differential Cross Section for Proton Induced Deuteron Breakup at 108 MeV</i>						Angelina Łobejko	
18:00	<i>Studies of Few-Nucleon Systems via <math>^2\text{H}(d,n)p</math> Deuteron Breakup Reaction</i>						Bogusław Włoch	
18:25	<b>End</b>							

<b>Parallel Lecture Theatre F (14:00 – 18:00)</b>		
<b>Atoms and molecules</b>		<i>Chair: Shalva Tsiklauri</i>
14:00	<i>Three-body systems in novel two-dimensional materials</i>	<b>Roman Kezerashvili</b>
14:30	<i>Accuracy of the Born-Oppenheimer approximation and universality in a one-dimensional three-body system</i>	Lucas Happ
14:55	<i>Universal Short Range Correlations in Bosonic Helium Clusters</i>	Betzalel Bazak
15:20	<i>Link between the complex rotation resonances and scattering matrix resonances</i>	Alexander Motovilov
15:45	<b>Coffee break (lower concourse )</b>	
<b>Clustering in Nuclei</b>		<i>Chair: Eduardo Garrido</i>
16:15	<del><i>Description of continuum structures in a discrete basis: Three-body resonances and two-nucleon decays</i></del>	<del><b>Jesús Casal</b></del>
16:20	<i>Impact of uncertainties of unbound <math>^{10}\text{Li}</math> on the ground state of two-neutron halo <math>^{11}\text{Li}</math></i>	Jagjit Singh
16:45	<i><math>^{19}\text{B}</math> isotope as a <math>^{17}\text{B}</math>-n-n three-body system in the unitary limit</i>	Jaume Carbonell
17:10	<i>Beryllium-9 in Cluster Effective Field Theory</i>	Elena Filandri
	<i>Clustering in <math>^{18}\text{O}</math> – absolute determination of branching ratios via high-resolution particle spectroscopy</i>	Stuart Pirrie
17:35	<i>Deuteron-Alpha Scattering in a Three-Body Approach</i>	Charlotte Elster
18:00	<b>End</b>	

<b>Parallel Lecture Theatre L (14:00 – 18:25)</b>		
<b>Short-range Correlations in Nuclei</b>		<i>Chair: Simon Sirca</i>
14:00	<i>Short-range nucleon correlations studied with electron and photon probes</i>	<b>Douglas MacGregor</b>
14:30	<i>Measurement of the ratio of the nucleon structure functions, <math>F_2n/F_2p</math>, from electron deep inelastic scattering off the <math>A=3</math> mirror nuclei</i>	Jason Bane
14:55	<i>Latest results concerning short range correlations obtained in the <math>dp</math> elastic and <math>dp</math> breakup processes at Nuclotron, JINR</i>	Marian Janek
15:20	<i>Theoretical study of Deeply Virtual Compton Scattering off <math>^4\text{He}</math></i>	Sara Fucini
15:45	<b>Coffee break (lower concourse )</b>	
<b>Hadrons and particles</b>		<i>Chair: Willibald Plessas</i>
16:15	<i>Mesons with charm and bottom quarks in a covariant quark model</i>	<b>Alfred Stadler</b>
16:45	<i>The charged <math>Z_c</math> and <math>Z_b</math> structures in a constituent quark model approach</i>	Pablo Garcia Ortega
17:10	<i>Generalized parton distribution functions of <math>\rho</math> meson</i>	Yubing Dong
17:35	<del><i><math>\mathbb{Y}(4260)</math> as a <math>\bar{s}q\bar{q}c</math> exotic vector meson by a quark-hadron hybrid model</i></del>	<del>Sachiko Takeuchi</del>
18:00	<b>End</b>	

<b>Plenary</b>		
<b>Lecture Theatre D</b> (9:00 – 12:35)		<i>Chair: Teresa Pena</i>
8:30	<b>Morning coffee and registration (lower concourse)</b>	
9:00	<i>Skyrmions and clustering in light nuclei</i>	<b>Paul Sutcliffe</b>
9:35	<i>Lattice simulations for nuclei, ultracold atoms, and ions</i>	<b>Dean Lee</b>
10:10	<i>What have we learned on nucleon structure from Lattice QCD and future prospects?</i>	<b>Constantia Alexandrou</b>
10:45	<b>Coffee break (lower concourse)</b>	
	<b>Glauber session</b>	
		<i>Chair: Jim Al-Khalili</i>
11:15	<i>Roy Glauber and asymptotic diffraction theory</i>	<b>Per Osland</b>
12:00	<i>The eikonal model of reactions involving exotic nuclei; Roy Glauber's legacy in today's nuclear physics</i>	<b>Pierre Capel</b>
12:35	<b>Lunch break (Hillside restaurant)</b>	

<b>Parallel</b>		
<b>Lecture Theatre D</b> (14:00 – 18:00)		
	<b>Few-Nucleon Systems</b>	
		<i>Chair: Izabela Skwira-Chalot</i>
14:00	<i>Few-Nucleon System Dynamics Studied via Deuteron-Deuteron Collisions at 160 MeV</i>	<b>Izabela Ciepał</b>
14:30	<i>Quasi-free limit in the deuteron-deuteron three-body break-up process</i>	Nasser Kalantar-Nayestanaki
14:55	<i>Measurement for <math>p</math>-<math>^3\text{He}</math> elastic scattering with a 65 MeV polarized proton beam</i>	Shinnosuke Nakai
15:20	<i>Measurement of <math>^3\text{He}</math> analyzing power for <math>p</math>-<math>^3\text{He}</math> scattering using the polarized <math>p</math>-<math>^3\text{He}</math> target</i>	Atomu Watanabe
	<b>Light Nuclei</b>	
		<i>Chair: Pierre Descouvemont</i>
16:20	<i>Influence of the Pauli principle on two-cluster potential energy</i>	Yuliya Lashko
16:45	<i>Electric-dipole transitions in <math>^6\text{Li}</math> with a fully microscopic six-body calculation</i>	Wataru Horiuchi
17:10	<i>From three- to six-body systems within a properly symmetrized hyperspherical harmonics approach</i>	Jérémy Dohet-Eraly
17:35	<i>Study of 3- and 4-neutron systems using the hyperspherical method</i>	Michele Viviani Alejandro Kievsky
18:00	<b>End</b>	

<b>Public lecture</b>	<b>The day without a yesterday</b>	<b>Marcus Chown</b>
	<b>Lecture Theatre D</b> (19:00 – 20:00)	



<b>Parallel Lecture Theatre F (14:00 – 18:00)</b>		
<b>Atoms and molecules</b>		<i>Chair: Jordi Mur-Petit</i>
14:00	<i>Donor impurities in silicon as a platform for few-body problems: donor excitation and donor-donor interactions</i>	<b>Benedict Murdin</b>
14:30	<i>Energy spectrum of excitons in semiconductor quantum wells</i>	Pavel Belov
14:55	<i>Theory of three and four body quantum dots in Monolayer Transition Metal Dichalcogenides</i>	Shalva Tsiklauri
15:20	<i>Dipolar condensed atomic mixtures and miscibility under rotation</i>	Lauro Tomio
15:45	<b>Coffee break (lower concourse )</b>	
<b>Atoms and molecules</b>		<i>Chair: Roman Kezerashvili</i>
16:15	<i>Revealing missing charges in few-body cold-atom systems with generalised quantum fluctuation relations</i>	<b>Jordi Mur-Petit</b>
16:45	<i>A coherent superposition of Feshbach dimers and Efimov trimer</i>	Lev Khaykovich
17:10	<i>Phase Transitions of an Ultracold Gas in a Quasicrystalline Potential</i>	Dean Johnstone
17:35	<i>The nodal structure of wave functions with non-local potentials</i>	Arnau Rios
18:00	<b>End</b>	

<b>Parallel Lecture Theatre L (14:00 – 18:00)</b>		
<b>Short-range Correlations in Nuclei</b>		<i>Chair: Douglas McGregor</i>
14:00	<i>Study Nucleon-Nucleon Interaction with Short Range Correlation</i>	<b>Eli Piasezky</b>
14:30	<del><i>Towards Renormalization Invariant Equation of State of Nuclear Matter</i></del> <i>Nuclear short range correlations and universality</i>	Mehdi Drissi Nir Barnea
14:55	<i>Bogoliubov Many-Body Perturbation Theory</i>	Pierre Arthuis
15:20	<del><i>Nuclear short range correlations and universality</i></del> Renormalisation of pionless EFT for many-body approximations : a systematic approach	Nir Barnea Mehdi Drissi
15:45	<b>Coffee break (lower concourse )</b>	
<b>Hyperon interactions and hypernuclei</b>		<i>Chair: Nina Shevchenko</i>
16:15	<i>Exploring the Unknown <math>\Lambda</math>-n Interaction</i>	<b>Benjamin Gibson</b>
16:45	<i>Light single- and double-lambda hypernuclei in pionless effective field theory</i>	Lorenzo Contessi
17:10	<del><i>Lambda-nucleon potentials and Gel'fand-Levitan-Marchenko theory</i></del>	Emile Fonki Meoto
17:35	<i>Study of the Hyperon-nucleon interaction using the CLAS detector</i>	Nicholas Zachariou
18:00	<b>End</b>	

<b>Plenary</b>		<b>Lecture Theatre D</b> (9:00 – 13:00)	<i>Chair:</i> <i>Nir Barnea</i>
8:30	<b>Morning coffee and registration (lower concourse)</b>		
9:00	<i>Hyperons - a strange key to the strong interaction</i>	<b>Karin Schönning</b>	
9:35	<i>Nuclear structure corrections in light muonic atoms</i>	<b>Sonia Bacca</b>	
10:10	<i>Energy-dependent 3-body loss in 1D Bose gases</i>	<b>David Weiss</b>	
10:45	<b>Coffee break (lower concourse)</b>		
		<i>Chair: Nasser Kalantar-Nayestanaki</i>	
11:15	<i>Exploring Three-Nucleon Forces in Three- and Four-Nucleon Scattering</i>	<b>Kimiko Sekiguchi</b>	
11:50	<i>*(2830) hexaquark: from Photoproduction to Neutron Stars</i>	<b>Mikhail Bashkanov</b>	
12:25	<i>Dibaryon resonances and NN interaction</i>	<b>Olga Rubtsova</b>	
13:00	<b>Lunch break (Hillside restaurant)</b>		

**Conference excursion**

**Hampton Court** (14:30 – 17:30)

**Conference dinner**

**Garden Room** (17:30 – 22:00)



## NOTES

<b>Plenary</b>		
<b>Lecture Theatre D (9:00 – 12:35)</b>		<i>Chair: Teresa Pena Guiseppina Orlandini</i>
8:30	<b>Morning coffee and registration (lower concourse)</b>	
9:00	<i>Few-body strangeness nuclei and their puzzles</i>	<b>Takehiko Saito</b>
9:35	<i>Weakly bound nuclei: A unified description of intrinsic and relative degrees of freedom</i>	<b>Eduardo Garrido</b>
10:10	<i>Ab Initio Calculations of Light Hypernuclei</i>	<b>Daniel Gazda</b>
10:45	<b>Coffee break (lower concourse)</b>	
11:17	<b>Young Researcher Award Ceremony</b>	
		<i>Chair: Alejandro Kievsky</i>
11:30	<i>The Hoyle Family: precision break-up measurements to explore nuclear alpha-condensates</i>	<b>Robin Smith</b>
12:05	<i>Few nucleons and other stories</i>	<b>Sebastian König</b>
12:40	<b>Lunch break (Hillside restaurant)</b>	

<b>Parallel</b>		
<b>Lecture Theatre D (14:00 – 18:25)</b>		
<b>Few-Nucleon Systems</b>		<i>Chair: Winfried Leidemann</i>
14:00	<i>Electroweak processes in few-nucleon systems</i>	<b>Michele Viviani</b>
14:30	<i>Response functions and cross sections for inclusive neutrino scattering off <math>^2\text{H}</math>, <math>^3\text{H}</math> and <math>^3\text{He}</math></i>	Alessandro Grassi
14:55	<i>Isospin-breaking nucleon-nucleon interaction up to fifth order in chiral EFT</i>	Patrick Reinert
15:20	<i>Application of the JISP16 potential to the nucleon induced deuteron breakup process at <math>E=13</math> MeV and <math>E=65</math> MeV</i>	Volodymyr Soloviov
15:45	<b>Coffee break (lower concourse)</b>	
<b>Clustering in Nuclei</b>		<i>Chair: Carl Wheldon</i>
16:15	<i>Few-body reactions investigated via the Trojan Horse Method</i>	<b>Roberta Sparta</b>
16:45	<i>Clustering in <math>^{18}\text{O}</math>—absolute determination of branching ratios via high-resolution particle spectroscopy</i>	Stuart Pirrie
	<i>Beryllium-9 in Cluster Effective Field Theory</i>	Elena Filandri
17:10	<i>How to determine the shape of nuclear molecules with polarized gamma-rays</i>	Lorenzo Fortunato
17:35	<i>Impact of uncertainties of unbound <math>^{10}\text{Li}</math> on the ground state of two-neutron halo <math>^{11}\text{Li}</math></i>	Jagjit Singh
	<i>Description of continuum structures in a discrete basis: Three-body resonances and two-nucleon decays</i>	<b>Jesús Casal</b>
18:00	<i>Study of relativistic dissociation the <math>^{12}\text{C}</math> and <math>^{16}\text{O}</math> nuclei with nuclear track emulsion</i>	Denis Artemenkov
18:25	<b>End</b>	
18:05		

<b>Parallel Lecture Theatre F (14:00 – 18:00)</b>		
<b>Atoms and molecules</b>		<i>Chair: Jonathan Tennyson</i>
14:00	<i>Fully Differential Study of Ionization of H<sub>2</sub> by p Impact Near Velocity Matching</i>	<b>Michael Schulz</b>
14:30	<i>Hyperfine state-to-state ultracold atom-dimer reaction in a magnetic field</i>	Jinglun Li
14:55	<i>Weakly bound He<sub>2</sub>-Li molecules in framework of Faddeev equations Solving the few-body problem with artificial neural networks</i>	Elena Kolganova James Keeble
15:20	<i>A few-body integrodifferential equation with exact boundary conditions</i>	Gaotsiwe Rampho
15:45	<b>Coffee break (lower concourse )</b>	
<b>Few-Body techniques</b>		<i>Chair: Jacek Golak</i>
16:20	<i>Removing the Wigner bound in non-perturbative EFT</i>	Saar Beck Betzael Bazak
16:45	<i>On the determination of response functions obtained from their Lorentz integral transforms</i>	Winfried Leidemann
17:10	<i>Extrapolation of bound state energies obtained in the oscillator basis</i>	Vasily Kulikov
17:35	<i>Effective field theory in finite volume</i>	Moti Eliyahu Nir Barnea
18:00	<b>End</b>	

<b>Parallel Lecture Theatre L (14:00 – 18:00)</b>		
<b>Hadrons and particles</b>		<i>Chair: Angels Ramos</i>
14:00	<i>Heavy-Baryon Spectroscopy</i>	<b>Willibald Plessas</b>
14:30	<i>Hadronic molecules of heavy hadrons with tensor force</i>	Yasuhiro Yamaguchi
14:55	<i>Properties of heavy mesons at finite temperature</i>	Gloria Montaña
15:20	<i>Strange pentaquark resonances with a heavy quark-antiquark pair</i>	Sachiko Takeuchi
15:45	<b>Coffee break (lower concourse )</b>	
<b>Kaonic Atoms and Clusters</b>		<i>Chair: Ben Gibson</i>
16:20	<i>Kaonic atoms experiments at the DAFNE collider</i>	<b>Magdalena Skurzok</b>
16:45	<i>Isospinless Model for ppK<sup>-</sup> Kaonic Cluster</i>	Branislav Vlahovic
17:10	<i>Four-body Faddeev-type calculation of the <math>\bar{K}NNN</math> system</i>	Nina Shevchenko
17:35	<i>Hyperspherical Harmonics Method with Particle Transition Degrees of Freedom</i>	Fabrizio Ferrari Ruffino
18:00	<b>End</b>	

<b>Poster session</b>	<b>Lower concourse of the Lecture Theatre</b>	<b>(18:30 – 19:30)</b>
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Friday 6th September 2019

<b>Plenary</b>		<i>Chair:</i> <i>Elena Kolganova</i> <i>Arnoldas Deltuva</i>
<b>Lecture Theatre D (9:00 – 10:45)</b>		
8:30	<b>Morning coffee (lower concourse)</b>	
9:00	<i>Study of light nuclei by polarization observables in electron scattering</i>	<b>Simon Sirca</b>
9:35	<i>Universal few-body clusters in cold atoms</i>	<b>Shimpei Endo</b>
10:10	<i>Giving a twist to Halo states: Helium Dimer and Trimer in Rotation</i>	<b>Reinhard Dörner</b>
10:45	<b>Coffee break (lower concourse)</b>	

<b>Parallel</b>		
<b>Lecture Theatre F (11:15 – 15:45)</b>		
<b>Atoms and molecules</b>		<i>Chair: Aleksandr Motovilov</i>
11:15	<i>Spin-orbit-coupled Bose-Einstein Condensate as playground to explore quantum collision and chemistry</i>	<b>Yong Chen</b>
11:45	<i>Four-Body Scale in Universal Few-Boson Systems</i>	Johannes Kirscher
12:10	<i>Elastic scattering of three ultracold bosons</i>	Paul Mestrom
12:35	<i>An investigation for the appearance of long range nuclear potential on the ultra low energy nuclear synthesis</i>	Shinsho Oryu
13:00	<b>Lunch break (Hillside restaurant )</b>	
<b>Atoms and molecules</b>		<i>Chair: Shimpei Endo</i>
14:00	<i>Low-dimensional few-body collisional processes in atom-ion traps</i>	<b>Vladimir Melezhik</b>
14:30	<i>Three-body correlations in mesonic-atom-like systems</i>	Hajime Moriya
14:55	<i>Scattering phase shifts and mixing angles for an arbitrary number of coupled channels on the lattice</i>	Lukas Bovermann
15:20	<i>Solving the few-body problem with artificial neural networks</i>	James Keeble
15:45	<b>Coffee break (lower concourse)</b>	

**Friday 6th September 2019**

<b>Parallel Lecture Theatre L (11:20 – 15:45)</b>		
<b>Nuclear Reactions</b>		<i>Chair: Charlotte Elster</i>
11:20	<i>Effects of an induced three-body force in the incident channel of (d,p) reactions</i>	Michael Dinmore
11:45	<i>Analysis of breakup of halo nuclei using configuration space Faddeev-Yakubovsky formalism</i>	Mantile Leslie Lekala
12:10	<i>Multi-neutron transfer in the scattering of <math>^8\text{He}</math> at Coulomb barrier energies</i>	Ismael Martel Bravo
12:35	<i>Few-body results for <math>^{12}\text{C}(p,pN)</math> at high energies</i>	<del>Raquel Crespo</del> Arnoldas Deltuva
13:00	<b>Lunch break (Hillside restaurant )</b>	
<b>Few-Body Systems</b>		<i>Chair: Rimantas Lazauskas</i>
14:05	<i>Study of deuteron-proton backward elastic scattering at intermediate energies</i>	Nadezhda Ladygina
14:30	<i>Three-nucleon force effects in nucleon-deuteron scattering at backward angles</i>	Souichi Ishikawa
14:55	<i>Correlation analysis and statistical uncertainty of three-nucleon scattering observables</i>	Yuriy Volkotrub
15:20	<i>The <math>D_{\{03\}(2380)}</math> dibaryon resonance excitation in <math>pd</math> collision in the GeV region</i>	Nurbek Tursunbayev
15:45	<b>Coffee break (lower concourse)</b>	

<b>Plenary Lecture Theatre D (16:15 – 17:30)</b>		<i>Chair: Paul Stevenson</i>
16:15	Poster Prize Awards	Nasser Kalantar-Nayestanaki
16:25	<i>Experiments and analyses aimed at understanding nuclear clustering</i>	<b>Carl Wheldon</b>
17:00	<i>Few-body physics: getting more effective</i>	<b>Michael Birse</b>
17:30	<b>End</b>	