

Gemeinsame Jahrestagung in Zürich 26. - 30. August 2019

Universität Zürich, Irchel Campus

Réunion annuelle commune à Zürich 26 - 30 août 2019

Programmübersicht Aperçu du programme



in Zusammenarbeit mit - en collaboration avec

Programmübersicht - Aperçu du programme

Das vollständige Programm wird allen Teilnehmern am Tagungssekretariat abgegeben sowie auf der Konferenz- und der SPG-Webseite publiziert.

Hinweise:

- Je Beitrag wird nur der präsentierende Autor aufgeführt.
- Die Postersitzung ist am Mittwoch von 19:00 - 20:30 (mit Apéro) sowie am Donnerstag von 12:00 - 14:00 (mit Lunch Buffet).
- (p) = Plenarsprecher, (i) = eingeladener Sprecher

Le programme final complet sera distribué aux participants au stand du secrétariat de la conférence et sera également publié sur le site de la conférence et de la SSP.

Indications:

- seul le nom de l'auteur présentant la contribution a été indiqué.
- la session poster a lieu le mercredi de 19:00 à 20:30 (avec apéro) ainsi que le jeudi de 12:00 à 14:00 (avec buffet de midi).
- (p) = orateur de la session plénière, (i) = orateur invité

Plenary Session

Tuesday, 27.08.2019, Room G 30

Time	ID	PLENARY SESSION I
10:00		OFFICIAL CONFERENCE OPENING
		Chair: Alberta Bonanni, JKU Linz
10:10	1	Artificial intelligence in materials science - hype or revolution? Claudia Draxl (p)
		Chair: Philippe Jetzer, Uni Zürich
10:50	2	Understanding Giant Planets Ravit Helled (p)
11:30		General Assemblies of SPS and ÖPG *
12:30		Lunch
14:00		Topical Sessions
		PUBLIC LECTURE Chair: Thilo Stöferle, IBM Rüschlikon
19:30	3	The Quantum Way of Doing Computations Rainer Blatt (p)
20:45		END

Wednesday, 28.08.2019, Room G 30

Time	ID	PLENARY SESSION II Chair: Peter Korczak
09:00	4	The Future of Computing Heike Riel (p)
		Chair: Emmerich Kneringer, Uni Innsbruck
09:40	5	Galactic High-Energy Particle Accelerators Olaf Reimer (p)
10:20		Coffee Break
10:50		Award Ceremony
		Chair: Hans Peter Beck, Uni Bern
11:50	6	The Einstein-Podolsky-Rosen paradox in a many-body system Matteo Fadel (i)
		Chair: Gottfried Strasser, TU Wien
12:20	7	Many-body localization, thermalization, and entanglement Maksym Serbyn (i)
12:50		Lunch
14:00		Topical Sessions
19:00		Postersession with Apéro
20:30		END

Thursday, 29.08.2019, Room G 30

Time	ID	PLENARY SESSION III Chair: Philipp Treutlein, Uni Basel
09:00	8	Probing nanoscale magnetism using single spin magnetometry Patrick Maletinsky (p)
		Chair: Giovanni Dietler, EPFL
09:40	9	Synthetic holography with spatial light modulators for biophotonics applications Monika Ritsch-Marte (p)
10:20		Coffee Break
		Chair: Andreas Schopper, CERN
10:50	10	First electron acceleration in AWAKE, the proton driven plasma wakefield acceleration experiment Edda Gschwendtner (p)
		Chair: Minh Quang Tran, EPFL
11:30	11	A brief history of polariton quantum fluids Benoît Deveaud (i)
12:00	12	cancelled
12:00		Postersession with Lunchbuffet
14:00		Topical Sessions
19:00		Transfer to Dinner
19:30		Conference Dinner

Friday, 30.08.2019, Room G 30

Time	ID	PLENARY SESSION IV Chair: Laura Heyderman, PSI & ETH Zürich
09:00	13	Compound semiconductor nanowires for next generation solar cells and quantum technologies Anna Fontcuberta i Morral (p)
		Chair: Bernhard Braunecker
09:40	14	Economic Materials Design for Clean Energy Greta R. Patzke (p)
10:20		Poster Award Session
10:40		Coffee Break
11:15		Topical Sessions
13:45		CONFERENCE END

* in Room G 91

On the Origin of the Elements - 150 Years of the Periodic Table

THIS SESSION HAS BEEN ORGANISED TOGETHER WITH SCNAT.
FURTHER DETAILS ON PAGE 13.

Friday, 30.08.2019, Room G 30

Time	ID	ON THE ORIGIN OF THE ELEMENTS - 150 YEARS OF THE PERIODIC TABLE Chair: Claus Beisbart, Uni Bern
11:15	31	Celebrating 150 years Periodic Table, historical remarks and current situation <i>Heinz W. Gäggeler (i)</i>
12:00	32	Big Bang and stars, two hot environments for making elements <i>Georges Meynet (i)</i>
12:45	33	Stellar Explosions and the Heavy Elements <i>Friedrich-Karl Thielemann (i)</i>
13:30		END

Quantum and Artificial Intelligence: New Jobs for Physicists in Emergent Industries

Thursday, 29.08.2019, Room G 60

Time	ID	QUANTUM AND ARTIFICIAL INTELLIGENCE: NEW JOBS FOR PHYSICISTS IN EMERGENT INDUSTRIES Chair: Thilo Stöferle, IBM Rüschlikon
14:00	51	Introduction <i>Thilo Stöferle</i>
14:10	52	Benchmarking next-generation ion-trap quantum computers <i>Max Hettich (i)</i>
14:30	53	Can AI pass the exam for human pilots? <i>Luuk van Dijk (i)</i>
14:50	54	Quantum Computing at Microsoft <i>Damian Steiger (i)</i>
15:10	55	AI assisted Scalable Knowledge Ingestion for Automated Discoveries <i>Michele Dolfi (i)</i>
15:30	56	Applying Quantum Computing to Quantum Chemistry <i>Jan Reiner (i)</i>
15:50	57	Industrial AI at work: Cyber Physical Production Systems and Cognitive Services for Power Line Systems at Siemens Austria <i>Herwig Schreiner (i)</i>
16:10	58	Sensing with Diamonds <i>Gabriel Puebla-Hellmann (i)</i>
16:30		Coffee Break
		Chair: Andreas Fuhrer, IBM Rüschlikon
17:00	59	Zurich Instruments and the Race for the Quantum Computer <i>Jan Benhelm (i)</i>
17:20	60	Quantum and AI research: challenges for physicists at Bosch <i>David Reeb (i)</i>
17:40	61	Quantum Technologies: from basic research to industry <i>Stephan Ritter (i)</i>
18:00	62	Pathways for quantum researchers to industry <i>Frank Ruess (i)</i>

18:20		END
19:00		Transfer to Dinner
19:30		Conference Dinner

KOND

Tuesday, 27.08.2019, Room G 95

Time	ID	KOND I: MAGNETISM Chair: Verena Ney, JKU Linz
14:00	101	Spin fluctuation induced Weyl semimetal state in the paramagnetic phase of EuCd_2As_2 <i>Junzhang Ma</i>
14:15	102	Spin wave modes in Permalloy micro stripes using time-resolved scanning transmission X-ray microscopy <i>Andreas Ney</i>
14:30	103	Spin-orbitronics of wurtzite semiconductors <i>Margherita Matzer</i>
14:45	104	Combining high-resolution Atomic Force Microscopy with Scanning Tunneling Microscopy induced light emission on single molecules <i>Katharina Kaiser</i>
15:00	105	Reduced Density Matrix Functional Theory for Superconductors <i>Carlos L. Benavides-Riveros</i>
15:15	106	Multiple Coulomb Phase in the Fluoride Pyrochlore CsNiCrF_6 <i>Tom Fennell</i>
15:30	107	Spatially resolved thermoelectric effects in semiconductor-metal heterostructures <i>Nadine Gächter</i>
15:45	108	Progressive lifting of the ground-state degeneracy of the long-range kagome Ising antiferromagnet <i>Jeanne Colbois</i>
16:00	109	Spin Hamiltonian and Dimensional Reduction in $(\text{Ba,Sr})\text{CuSi}_2\text{O}_6$ <i>Stephan Allenspach</i>
16:15	110	cancelled
16:30		Coffee Break
19:30		Public Lecture

Wednesday, 28.08.2019, Room G 95

Time	ID	KOND II: LOW-DIMENSIONAL SYSTEMS Chair: Oleg V. Yazyev, EPFL
17:00	111	Spin-Orbital Excitations in Ca_2RuO_4 revealed by Resonant Inelastic X-Ray Scattering <i>Lakshmi Das</i>
17:15	112	Disentangling charge and spin excitations and their evolution in the phase diagram of $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ superconducting cuprate <i>Wenliang Zhang</i>
17:30	113	High-speed domain wall racetracks in a magnetic insulator <i>Saül Vélez</i>
17:45	114	Static and dynamic magnetic coupling in $\text{Co}_x\text{Zn}_{1-x}\text{O}$ -Permalloy heterostructures <i>Verena Ney</i>
18:00	115	$\text{La}_2\text{NiMnO}_6$ thin films grown by off-axis RF magnetron sputtering <i>Gabriele de Luca</i>
18:15	116	Tuning the electronic structure of LaNiO_3 thin films <i>Jasmin Jandke</i>

18:30	117	Electron-lattice interaction boost on the verge of metal-insulator transition in oxides <i>Vladimir Strocov</i>
18:45	118	Giant Magnetoelectric Response and Cross-Caloric Effect Around a Tetracritical Point in Multiferroic SrMnO ₃ <i>Alexander Edström</i>
19:00		Postersession with Apéro
20:30		

Thursday, 29.08.2019, Room G 95

Time	ID	KOND III: OXIDES <i>Chair: Fabian O. von Rohr, Uni Zürich</i>
17:00	121	Investigation of topological channels in twisted bilayer graphene <i>Peter Rickhaus</i>
17:15	122	Temperature dependent photoemission study of the charge-ordered phases in IrTe ₂ <i>Maxime RUMO</i>
17:30	123	Van der Waals magnetic materials: growth and characterization <i>Dumitru Dumcenco</i>
17:45	124	ARPES study of few layer black phosphorus crystals <i>Florian Margot</i>
18:00	125	Three Dimensional Lithography on Silicon Nanowire Arrays - An Electrochemical Approach <i>Gilles Bourret</i>
18:15	126	Optically active nanowires nucleated via a novel focused ion beam implantation method <i>Suzanne Lancaster</i>
18:30	127	Electrostatically-Defined Quantum Dots in Bilayer Graphene <i>Annika Kurzmann</i>
18:45	128	Imaging Disorder in a Bilayer-Graphene Channel <i>Carolin Gold</i>
19:00		Transfer to Dinner
19:30		Conference Dinner

Friday, 30.08.2019, Room G 95

Time	ID	KOND IV: OPTICAL PHENOMENA <i>Chair: Gottfried Strasser, TU Wien</i>
11:15	131	μ -fluidic sensing with a quantum cascade lab-on-a-chip <i>Florian Pilat</i>
11:30	132	Theoretical study of the intra-cavity dynamics behind phase locking of quantum cascade laser frequency combs <i>Nikola Opačak</i>
11:45	133	Dual-comb spectrometer by single Doppler shifted MIR QCL frequency comb <i>Mehran Shahmohammadi</i>
12:00	134	Picosecond pulses from mid-infrared quantum cascade lasers <i>Johannes Hillbrand</i>
12:15	135	Interband and quantum cascade laser frequency combs: From fundamentals towards monolithic spectrometers <i>Benedikt Schwarz</i>
12:30	136	Thermoelectrically cooled THz quantum cascade laser operating up to 210 K <i>Lorenzo Bosco</i>

12:45	137	Ring Interband Cascade Lasers Running in Continuous Mode Operation <i>Hedwig Knötig</i>
13:00	138	Optoelectronic devices based on non-polar ZnO/ZnMgO quantum wells <i>Borislav Hinkov</i>
13:15	139	n-type Ge/SiGe Quantum Cascade Devices for THz Electroluminescence <i>David Stark</i>
13:30	140	Superfluorescence from lead halide perovskite quantum dot superlattices <i>Michael A. Becker</i>
13:45		END

ID	KOND POSTER
151	Time-resolved tunneling between Landau levels in a weakly coupled quantum dot in the integer and fractional quantum Hall regimes <i>Marc P. Rössli</i>
152	Characterization of Tannin-Furanic Foams by Raman Spectroscopy <i>Maurizio Musso</i>
153	Optimizing the mechanical performance of 3D-printed wood-fiber-reinforced biocomposites by adjusting the infill orientation <i>Maurizio Musso</i>
154	Finite-element mesh generation and simulation of magnetization dynamics in a three-dimensional artificial spin structure <i>Sebastian Gliga</i>
155	Ultra-low electronic temperature measurement in a cryogenic dilution refrigerator with an ⁴ He immersion cell <i>Giorgio Nicoli</i>
156	Weyl Orbits Without an External Magnetic Field <i>Tena Dubcek</i>
157	Spin States in a Gate-Defined Quantum Point Contact in an InAs Two-Dimensional Electron Gas <i>Christopher Mittag</i>
158	Topological scars <i>Seulgi Ok</i>
159	The polar distortion and its relation to magnetic order in multiferroic HoMnO ₃ <i>Nazaret Ortiz</i>
160	Spin-strain effects in the frustrated magnet Tb ₂ Ti ₂ O ₇ <i>Yulia Gritsenko</i>
161	Ground state crossings on spin clusters from tunneling interference <i>Ivo Aguiar Maceira</i>
162	Bulk electronic and local magnetic properties of semiconducting 2H-molybdenum ditelluride <i>Jonas Krieger</i>
163	Magnetism in semiconducting molybdenum dichalcogenides <i>Zurab Guguchia</i>
164	Towards the fabrication of ZnO-based quantum cascade lasers with double-metal waveguides <i>Hanh Hoang</i>
165	Magnetic order on a Kagome-like lattice <i>Virgile Favre</i>
166	RNiO ₃ (R = La _x Pr _{1-x} ; x = 0.1 to 1.0) perovskites at the extreme: Where Metal-Insulator Transition reaches 0 K <i>Yannick Maximilian Klein</i>
167	Temperature-driven Topological Phase Transition and Intermediate Dirac Semimetal Phase in ZrTe ₅ <i>Bing Xu</i>

168	Sparse Sampling in Scanning Probe Microscopy <i>Jens Oppliger</i>
169	Orbit of an oscillating scanning probe microscope tip <i>Lorena Niggli</i>
170	Magnetic and superconducting properties of the iron arsenide pnictides $Ba_{1-x}Na_xFe_2As_2$ as seen by infrared spectroscopy <i>Evgeniia Sheveleva</i>
171	Growth of Crystal Phase Engineered Planar Films of III-V Semiconductors <i>Philipp Staudinger</i>
172	Heating and dynamics in Floquet conformal field theory <i>Bastien Lapiere</i>
173	Size Dependent Lattice Expansion in nanocrystalline BCC Tantalum: Unusual Superconductivity and Magnetism <i>Subhrangsu Sarkar</i>
174	Quantum Mechanical Simulations of sub-atomic resolution differential phase contrast imaging of magnetic materials <i>Alexander Edström</i>
175	Neuromorphic Computing with coupled VO_2 oscillators <i>Elisabetta Corti</i>
176	Rf modulation of surface-emitting mid-IR ring DFB Quantum Cascade Lasers <i>Borislav Hinkov</i>
177	Homogeneous, bound-to-continuum THz Quantum Cascade Laser: 1.65 THz spectral bandwidth and RF injection locking <i>Andres Forrer</i>
178	A polarization-rotating Vivaldi antenna for improved far-field patterns of broadband terahertz quantum cascade lasers <i>Urban Senica</i>
179	<i>cancelled</i>
180	Elucidating the impact of B incorporation in GaAs through nanowire growth <i>Hermann Detz</i>
181	Dispersion measurements of Terahertz Quantum Cascade Fabry-Perot cavities and VECSELS <i>Tudor Olariu</i>
182	Magnetic field-effect on the charge order in underdoped $YBa_2Cu_3O_y$ <i>Fryderyk Lyzwa</i>
183	Stability of the Q-phase of $CeCoIn_5$ in the presents of localized magnetic impurities <i>Junying Shen</i>
184	The sound of the Q-phase in $CeCoIn_5$ - an ultrasound investigation <i>Damaris Tartarotti Maimone</i>
185	Polytypism in the $NbS_2 \pm \Delta$ system <i>Catherine Witteveen</i>

Surfaces, Interfaces and Thin Films

Tuesday, 27.08.2019, Room G 95

Time	ID	SURFACES, INTERFACES AND THIN FILMS I: SURFACE CHEMISTRY <i>Chair: Wolfgang Werner, TU Wien</i>
17:00	201	Probing solid-liquid interfaces with tender X-rays <i>Zbynek Novotny</i>
17:30	202	Electron Dynamics on $Cu_2O(111)$ Probed with Time-Resolved Photoemission <i>Lisa Grad</i>

17:45	203	Characterization of Sb_2Se_3 single crystal surfaces for photocatalysis <i>Roberta Totani</i>
18:00	204	Nanovoids in hexagonal boron nitride monolayer <i>Huanyao Cun</i>
18:15	205	Single-domain growth of h-BN on a "quasi-liquid" $Pt(110)$ surface <i>Dominik Steiner</i>
18:30	206	On-surface synthesis and substrate transfer of aligned graphene nanoribbons <i>Rimah Darawish</i>
18:45	207	Origin of enantio- and regioselectivity for the PdGa (111)-supported Huisgen reaction: experiment and theory <i>Martina Danese</i>
19:00		
19:30		Public Lecture

Wednesday, 28.08.2019, Room G 95

Time	ID	SURFACES, INTERFACES AND THIN FILMS II: MOLECULAR ADSORPTION AND ADVANCED METHODS <i>Chair: Zbynek Novotny, Uni Zürich</i>
14:00	211	Investigating charge-state transitions of molecules on insulating films by atomic force microscopy <i>Shadi Fatayer (i)</i>
14:30	212	Energy-level Alignment for Tetraphenylporphyrins on Oxide surfaces <i>Silviya Ninova</i>
14:45	213	Charge Transfer at Metal-Organic Interfaces Promoted by Dielectric Interlayers: a Comparison of Different Organic Molecular Monolayers on the $MgO/Ag(100)$-Surface <i>Christian S. Kern</i>
15:00	214	Aurophilic interactions on surfaces <i>Thorsten Wagner</i>
15:15	215	Fusion of alkyl groups to form phenyl rings: a new on-surface reaction <i>Amogh Kinikar</i>
15:30	216	On-surface synthesis and characterization of N-doped undecacene: a combined experimental and theoretical study <i>Kristjan Eimre</i>
15:45	217	Bloch-wave damping by Plasmons in Highly Oriented Pyrolytic Graphite <i>Wolfgang Werner</i>
16:00	218	Direct measurements of contact resistance in MoS_2-based thin film transistors via Kelvin probe force microscopy <i>Aleksandar Matkovic</i>
16:15	219	InteractiveXRDFit: a new tool to simulate and fit X-ray diffractograms of oxide thin films and heterostructures <i>Céline Lichtensteiger</i>
16:30		END; Coffee Break
19:00		Postersession with Apéro
20:30		

ID	SURFACES, INTERFACES AND THIN FILMS POSTER
231	Material characterization with positrons - Unique and complementary insights <i>Lars Gerchow</i>
232	Modulated magnetic-field susceptibility measurements for in-situ studies of organic/ferromagnetic interfaces <i>Aleksander Brozyniak</i>

233	Role of the surface structure in determining ferroelectric polarization direction <i>Chiara Gattinoni</i>
234	Probing the origin of ferromagnetic stability in LSMO/SRO <i>Anna Zakharova</i>
235	Development of a Low-Temperature Scanning Field Emission Microscope with Spin Polarization Analysis <i>Ann-Katrin Thamm</i>
236	Electronic properties of hexagonal Boron Nitride on Pt(110) <i>Marco Thaler</i>
237	Exploring the electron transfer at cuprate/manganite interfaces <i>Roxana Gaina</i>
238	Detection and Analysis of Low-Energy Electrons by means of a Miniature Energy Analyser: Experimental Characterisation and Preliminary Results <i>Alessandra Bellissimo</i>
239	Multi-parameter Analysis of Genesis and Evolution of Secondary Electrons in the Low-Energy Regime <i>Alessandra Bellissimo</i>
240	Solvent induced crystallization and physical properties of silk sericin film <i>In Chul Um</i>

Nuclear, Particle and Astrophysics (TASK)

Tuesday, 27.08.2019, Room G 55

Time	ID	TASK I: PRECISION PHYSICS AT LOW ENERGY <i>Chair: Klaus Kirch, ETH Zürich</i>
14:00	301	Analysis of the hyperfine splitting of the $5 \rightarrow 4$ transitions in muonic Re-185 and Re-187 <i>Stergiani Marina Vogiatzi</i>
14:15	302	Multi-pass optical cavity for the measurement of the hyperfine splitting in muonic hydrogen <i>Mirosław Marszałek</i>
14:30	303	Design of the detection system for the measurement of the hyperfine splitting in muonic hydrogen <i>Laura Sinkunaite</i>
14:45	304	Thin-Disk Laser for the Measurement of the Hyperfine-Splitting in Muonic Hydrogen <i>Manuel Zeyen</i>
15:00	305	Ramsey spectrometer for matter-antimatter experiments <i>Amit Nanda</i>
15:15	306	Recent Measurements on Vacuum Muonium Production <i>Narongrit Ritjoho</i>
15:30	307	Data Analysis for the PSI Neutron Electric Dipole Moment Experiment <i>Nicholas Ayres</i>
15:45	308	Next generation active magnetic shielding for n2EDM <i>Solange Emmenegger</i>
16:00	309	Development of a caesium magnetometer array for the n2EDM experiment <i>Georg Bison</i>
16:15	310	Johnson-Nyquist Noise Studies for the n2EDM Experiment at PSI <i>Pin-Jung Chiu</i>
16:30		Coffee Break
17:00	311	Momentum Spectroscopy of Neutron Beta Decay Products with NoMoS <i>Waleed Khalid</i>

17:15	312	Kaonic Deuterium X-Ray Measurements with the SIDDHARTA-2 Apparatus at DAFNE <i>Marlene Tüchler</i>
		TASK II: DARK MATTER AND NEUTRINO I <i>Chair: Paolo Crivelli, ETH Zürich</i>
17:30	313	Beyond colliders: exploring the dark sector with beam dumps <i>Elena Graverini</i>
18:00	314	Dark sectors searches at high-intensity colliders <i>Federico Leo Redi</i>
18:15	315	Search for long-lived heavy neutrinos with the CMS Experiment <i>Vinzenz Stampf</i>
18:30	316	NA64 - Search for dark matter at CERN SPS <i>Emilio Depero</i>
18:45		
19:30		Public Lecture

Tuesday, 27.08.2019, Room G 91

Time	ID	TASK III: DETECTOR <i>Chair: Ilse Krätschmer, HEPHY Wien</i>
17:00	321	Performance of the Belle II Silicon Vertex Detector <i>Christoph Schwanda</i>
17:15	322	SiPM detectors for the LHCb SciFi tracker upgrade <i>Sebastian Schulte</i>
17:30	323	Integration of the FELIX readout in the ATLAS ITk Pixel data transmission chain <i>Meghranjana Chatterjee</i>
17:45	324	Characterisation of the opto electrical data conversion system for the ATLAS detector upgrade <i>Roman Müller</i>
18:00	325	Serial powering and high hit rate efficiency measurement for the Phase 2 Upgrade of the CMS Pixel Detector. <i>Daniele Ruini</i>
18:15	326	zfit: scalable pythonic fitting <i>Jonas Eschle</i>
18:30	327	ArgonCube: A Modular Approach for Liquid Argon Time Projection Chambers <i>Roman Matthias Berner</i>
18:45	328	First dual-phase xenon TPC with SiPM readout and its ultra-low energy calibration with ^{37}Ar <i>Kevin Thieme</i>
19:00		
19:30		Public Lecture

Wednesday, 28.08.2019, Room G 55

Time	ID	TASK IV: HIGH ENERGY PHYSICS I <i>Chair: Günther Dissertori, ETH Zürich</i>
14:00	331	First Observation of the Seeded Proton Bunch Self-Modulation in Plasma <i>Marlene Turner (i)</i>
14:30	332	Review of flavour anomalies <i>Andrea Mauri</i>
15:00	333	Search for new physics in heavy baryon decays <i>Martina Ferrillo</i>
15:15	334	Search for the lepton-flavour-violating decay $B^+ \rightarrow K^+ \tau^+ \mu^+$ <i>Lino Ferreira Lopes</i>
15:30	335	Angular analysis of $B^0 \rightarrow K^0 \ell^+ \ell^-$ decays at LHCb <i>Zhenzi Wang</i>

15:45	336	CP violation in beauty and charm at LHCb <i>Julian Garcia Pardinás</i>
16:00	337	Search for CP violation in angular distributions of $D^0 \rightarrow 4h$ decays at LHCb <i>Tara Nanut</i>
16:15	338	Towards a measurement of the charm mixing parameter y_{CP} in $D^0 \rightarrow h^+h^-$ decays <i>Guillaume Max Pietrzyk</i>
16:30		Coffee Break
		TASK V: HIGH ENERGY PHYSICS II <i>Chair: Rainer Wallny, ETH Zürich</i>
17:00	341	Model-independent measurement of charm-mixing parameters in $D^0 \rightarrow K_s^0 \pi^+ \pi^-$ <i>Surapat Ek-In</i>
17:15	342	Measurement of CP violation with the ATLAS experiment <i>Emmerich Kneringer</i>
17:30	343	Amplitude analysis of $B^0 \rightarrow (\pi^+ \pi^-)(K^+ \pi^-)$ decays <i>Maria Vieites Diaz</i>
17:45	344	Towards a measurement of the differential decay rate of the decay $B^+ \rightarrow \rho^0 \mu^+ \nu_\mu$ at LHCb <i>Veronica Soelund Kirsebom</i>
18:00	345	Observation of Hbb in CMS <i>Krunal Bipin Gedia</i>
18:15	346	Measurement of ttH(bb) in proton-proton collision data at 13 TeV <i>Korbinian Schweiger</i>
18:30	347	Search for top squark pair production in events with Z bosons <i>Meinrad Schefer</i>
18:45	348	Low-mass dielectron measurements in pp, p-Pb and Pb-Pb collisions with ALICE at LHC <i>Elisa Meninno</i>
19:00		Postersession with Apéro
20:30		

Thursday, 29.08.2019, Room G 55

Time	ID	TASK VI: DARK MATTER AND NEUTRINO II <i>Chair: Tatsuya Nakada, EPFL</i>
14:00	351	Active Magnetic Shielding and Axion-Dark-Matter Search <i>Michał Rawlik</i>
14:30	352	Xenon1T results <i>Giovanni Volta</i>
14:45	353	<i>cancelled</i>
15:00	354	Search for Dark Absorption in XENON1T <i>Michelle Galloway</i>
15:15	355	Analysis of high-energy events in XENON1T <i>Chiara Capelli</i>
15:30	356	Axion-Dark-Matter Search using Cold Neutrons <i>Ivo Schulthess</i>
15:45	357	The SST-1M telescope <i>Cyril Martin Alispach</i>
16:00	358	Neutrino point-source searches for multi-messenger astronomy with IceCube <i>Anastasia Maria Barbano</i>
16:30		Coffee Break
		TASK VII: DARK MATTER AND NEUTRINO III <i>Chair: Christoph Schwanda, HEPHY Wien</i>
17:00	361	qBOUNCE: first results of the Ramsey-type GRS experiment <i>Joachim Bosina</i>

17:15	362	Studying the Extreme Behaviour of 1ES 2344+51.4 <i>Axel Arbet-Engels</i>
17:30	363	Latest results on cross-section measurement at T2K near detector <i>Stephanie Bron</i>
17:45	364	Sensitivity study for proton decay via $p \rightarrow K^+ + \bar{\nu}$ in the Deep Underground Neutrino Experiment <i>Christoph Alt</i>
18:00	365	The search for neutrinoless double beta decay in ^{76}Ge <i>Roman Hiller</i>
18:15	366	DARWIN: a next-generation multi-ton xenon observatory <i>Patricia Sanchez-Lucas</i>
18:30	367	Prospects for neutrino-less double beta decay detection with the DARWIN experiment <i>Yanina Biondi</i>
18:45	368	Overview of MicroBooNE <i>Thomas Josua Mettler</i>
19:00		END; Transfer to Dinner
19:30		Conference Dinner

ID	TASK POSTER
371	Muonic Atom Spectroscopy: Preparations Regarding a Measurement of the Charge Radius of Radium <i>Alexander Albert Skawran</i>
372	Ultracold neutron production and extraction from the solid deuterium converter of the PSI UCN source <i>Ingo Rienäcker</i>
373	Measuring the Beryllium Isotopic Composition in Cosmic Rays with the Alpha Magnetic Spectrometer on the International Space Station <i>Jiahui Wei</i>
374	Cosmic-ray Magnesium flux measured with the Alpha Magnetic Spectrometer on the International Space Station <i>Zhen Liu</i>
375	Cosmic-ray Silicon Flux measured with the Alpha Magnetic Spectrometer on the International Space Station <i>Yao Chen</i>
376	Diffusion of muonic atoms in the muX gas cell <i>Jonas Nuber</i>
377	A 2.6m tall DARWIN Demonstrator <i>Frédéric Girard</i>
378	Identification of ^{137}Xe like a background for 0νββ searches with DARWIN <i>Patricia Sanchez-Lucas</i>
379	Beam EDM detector characterization <i>Marc Solar</i>
380	Experimental strategy to test Lepton Flavour Universality in $b \rightarrow s^* l^+ l^-$ decays at LHCb <i>Sara Celani</i>
381	Qualification of the Radiation-Hard Electron Monitor (RADEM) for ESA JUICE mission <i>Patryk Socha</i>
382	Real-time detection of Supernova Neutrinos in XENONnT <i>Ricardo Peres</i>
383	XENONnT: The next stage in the search for dark matter with liquid xenon <i>Adam Brown</i>
384	Lamb Shift of (Anti)hydrogen <i>Devesh Nandal</i>
385	The SHIP-Charm Experiment <i>Dario De Simone</i>

386	Detection System for NoMoS <i>Waleed Khalid</i>
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Atomic Physics and Quantum Optics

Thursday, 29.08.2019, Room G 91

Time	ID	ATOMIC PHYSICS AND QUANTUM OPTICS I Chair: Lauri Toikka, Uni Innsbruck
14:45	401	Terahertz quantum optics in the time-domain. <i>Ileana-Cristina Benea-Chelmus (i)</i>
15:15	402	Positronium and Muonium precision spectroscopy: Measurement of the 1S-2S and excited state hyperfine transitions <i>Michael Heiss</i>
15:30	403	Spatial hole burning in thin-disk lasers and twisted-mode operation <i>Karsten Schuhmann</i>
15:45	404	Direct field correlation measurement on the electromagnetic ground state <i>Francesca Fabiana Settembrini</i>
16:00	405	Phase transition in the dynamical response of driven-dissipative light-matter systems <i>Matteo Soriente</i>
16:15	406	Quantum dynamics of a harmonic oscillator in a bath of two-level atoms <i>Katja Kustura</i>
16:30		Coffee Break
		ATOMIC PHYSICS AND QUANTUM OPTICS II Chair: Ileana-Cristina Benea-Chelmus, Harvard University
17:00	411	Ultra-coherent micro-mechanical resonators for quantum information processing at room temperature <i>Amir H. Ghadimi (i)</i>
17:30	412	<i>cancelled</i>
17:45	413	Spin drag in a one-dimensional quantum wire <i>Anne-Maria Visuri</i>
18:00	414	Non-Abelian Majorana fermions in topological s-wave Fermi superfluids <i>Lauri Toikka</i>
18:15	415	Diverging exchange force for ultracold fermionic atoms <i>Christian Schilling</i>
18:30		END
19:00		Transfer to Dinner
19:30		Conference Dinner

Quantum Science and Technology

THIS SESSION HAS BEEN ORGANISED IN COLLABORATION WITH THE NCCR QSIT.

Tuesday, 27.08.2019, Room G 60

Time	ID	QUANTUM SCIENCE AND TECHNOLOGY I Chair: Clemens Müller, IBM Rueschlikon
14:00	501	Introduction to QSIT Session <i>Klaus Ensslin (i)</i>
14:15	502	Scaling elements for ion trap quantum processors <i>Jonathan Home (i)</i>

14:45	503	Linking trapped-ion quantum nodes <i>Tracy Northup (i)</i>
15:15	504	Digital Quantum Simulation, Trotter Errors, and Quantum Chaos of the Kicked Top <i>Lukas Sieberer</i>
15:30	508	Entanglement transfer using local operations <i>Antoine Neven</i>
15:45	506	Experimental secure quantum computing with only classical clients <i>Michal Vyvlecka</i>
16:00	507	Quantum Communication: From Random Numbers To Teleportation <i>Rob Thew (i)</i>
16:30		Coffee Break
		QUANTUM SCIENCE AND TECHNOLOGY II Chair: Shabir Barzanjeh, IST Austria
17:00	511	A Broadband Rb Vapor Cell Quantum Memory for Single Photons <i>Gianni Buser</i>
17:15	512	Sub-second optical storage using dynamical decoupling in an atomic frequency comb memory <i>Adrian Holzäpfel</i>
17:30	513	Ultra coherent nanomechanical oscillators <i>Tobias Kippenberg (i)</i>
18:00	514	Quantum Simulation with Ultracold Dipolar Atoms <i>Francesca Ferlaino (i)</i>
18:30	515	Scattering from the dark and birefringent modes: new self-organisation phases <i>Davide Dreon</i>
18:45	516	Local spin manipulation of quantized atomic currents <i>Laura Corman</i>
19:00		
19:30		Public Lecture

Wednesday, 28.08.2019, Room G 60

Time	ID	QUANTUM SCIENCE AND TECHNOLOGY III Chair: Matthias Mergenthaler, IBM Rueschlikon
14:00	521	Quantum Information Science with Superconducting Circuits <i>Andreas Wallraff (i)</i>
14:30	522	Gate-efficient simulation of molecular eigenstates on a quantum computer <i>Marc Ganzhorn</i>
14:45	523	Interacting TLS as sources of noise and fluctuations in superconducting circuits <i>Clemens Müller</i>
15:00	524	Transduction and entanglement generation with silicon nanobeam oscillators <i>Johannes Fink (i)</i>
15:30	525	Experimental Realization of Microwave Quantum Illumination <i>Shabir Barzanjeh</i>
15:45	526	Double Quantum Dots in an Undoped Germanium Heterostructure <i>Andrea Hofmann</i>
16:00	527	Coupling spins coherently to microwave photons <i>Thomas Ihn (i)</i>
16:30		Coffee Break
Time	ID	QUANTUM SCIENCE AND TECHNOLOGY IV Chair: Lukas Sieberer, Uni Innsbruck
17:00	531	Shot-noise of high-impedance quantum devices using impedance matching <i>Christian Schönenberger</i>

17:15	532	Electron-polariton interactions in the fractional quantum Hall regime <i>Thibault Chervy</i>
17:30	533	All fermionic non-Gaussian states are magic states for matchgate computations <i>Barbara Kraus (i)</i>
18:00	534	The information theory of reference clocks <i>Ralph Silva</i>
18:15	535	Quantum interference of topological states of light <i>Oded Zilberberg</i>
18:30	536	Quantum Computing and Detection of Cancer <i>Beatrix Hiesmayr (i)</i>
19:00		Postersession with Apéro
20:30		

Friday, 30.08.2019, Room G 60

Time	ID	QUANTUM SCIENCE AND TECHNOLOGY V Chair: Laura Corman, ETH Zürich
11:15	541	Progress in the quantum control of single molecules <i>Ziv Meir (i)</i>
11:45	542	Atom Interferometry: Gravity, Blackbody Radiation and Dark Energy <i>Philipp Haslinger (i)</i>
12:15	543	Long-Baseline Universal Matter-Wave Interferometry <i>Sebastian Pedalino</i>
12:30	544	Long-term stability analysis of a compact Ramsey-scheme vapor-cell atomic clock at 10^{-14} level <i>Nil Almat</i>
12:45	545	Towards spin-squeezing a solid <i>Krzysztof T. Kaczmarek</i>
13:00	546	Cavity-Based 3D Cooling of a Levitated Nanoparticle via Coherent Scattering <i>Dominik Windey</i>
13:15		END

ID	QUANTUM SCIENCE AND TECHNOLOGY POSTER
551	Fabry-Pérot interference in InAs/GaSb quantum wells <i>Michele Masseroni</i>
552	Investigating coherence limitations in transmon qubits <i>Matthias Mergenthaler</i>
553	Optimal Control of Superconducting Qubits <i>Max Werninghaus</i>
554	Entanglement in special relativistic settings <i>Christoph Schöberl</i>
555	Quantum informational analysis of neutrino oscillations via Leggett-Garg inequalities <i>Christiane Schultze</i>
556	Investigating noise sources with a triple quantum dot charge qubit <i>Benedikt Kratochwil</i>
557	Measurable Inequalities for higher dimensional Quantum Secret Sharing Protocols <i>Michael Partener</i>
558	Dissipative time-crystal phase in parametrically unstable optical cavities <i>Kilian Robert Seibold</i>
559	Entangled two-photon absorption and the quantum advantage in sensing <i>Dmitry Tabakaev</i>
560	Spin detection through parametric mode coupling in nano-membranes <i>Jan Kosata</i>

561	Quantum dynamics of an ultracold ion coupled to a nano-mechanical oscillator <i>Moritz Weegen</i>
562	Quantum-Logic Assisted Molecular Precision Measurements Using a Network for The Distribution of The Swiss Frequency Standard <i>Aleksandr Shlykov</i>
563	Classical many-body time crystals <i>Toni Heugel</i>
564	Cavity Exciton-Polariton Condensates in Engineered Potential Landscapes at Room Temperature <i>Fabio Scafirimuto</i>
565	Bidirectional Microwave to Optical Gaussian Quantum State Transfer <i>Alfredo Rueda</i>
566	moved to talk 508
567	Integrating a fiber cavity along the axis of a linear ion trap <i>Klemens Schüppert</i>
568	High-rate photon pairs and sequential Time-Bin entanglement with Si_3N_4 ring microresonators <i>Farid Samara</i>
569	Optical spin-wave storage in a paramagnetic solid state crystal <i>Moritz Businger</i>
570	Coupled Quantum Dots in Bilayer Graphene with Tunable Barriers <i>Chuyao Tong</i>
571	Accuracy enhancing protocols for quantum clocks <i>Yuxiang Yang</i>
572	Can quantum algorithms in chemistry outperform their classical equivalent? Advanced Quantum Unitary Coupled Cluster methods for strongly correlated systems. <i>Igor Sokolov</i>
573	Strong magneto-mechanical coupling <i>David Zöpfel</i>
574	Dimerized states and dynamical instabilities in a blue-detuned cavity-BEC system <i>Rui Lin</i>
575	Qubit-losses in topological quantum computers: An experimental toolbox <i>Roman Stricker</i>

MaNEP: Correlations and topology in quantum matter

THIS SESSION HAS BEEN ORGANISED IN COLLABORATION WITH THE ASSOCIATION MaNEP.

Tuesday, 27.08.2019, Room G 85

Time	ID	CORRELATIONS AND TOPOLOGY IN QUANTUM MATTER I: DYNAMICS, MAGNETISM AND TOPOLOGY Chair: Mark Fischer, Uni Zürich
14:00	601	Novel families of $\text{SU}(N)$ AKLT states with arbitrary self-conjugate edge states <i>Samuel Gozel</i>
14:15	602	Generating multiple universality classes and nodal loops in Chern insulators by periodic driving <i>Paolo Mognini</i>
14:30	603	Localization properties of the interpolating Aubry-André-Fibonacci model <i>Antonio Štrkalj</i>
14:45	604	4D topology in a dynamical 2D system <i>Ioannis Petrides</i>

15:00	605	Novel structural and electronic phases of 2D transition metal dichalcogenides <i>Oleg V. Yazyev (i)</i>
15:30	606	Discovery and engineering of new topological quantum materials <i>Niels B. M. Schröter</i>
15:45	607	Tunable Berry Curvature Through Magnetic Phase Competition in a Topological Kagome Magnet <i>Zurab Guguchia</i>
16:00	608	Do topology and ferromagnetism cooperate at the EuS/Bi ₂ Se ₃ interface? <i>Jonas Á. Krieger</i>
16:15	609	Ultrafast dynamics of the magnetic fluctuations in the spin-chain CuGeO ₃ <i>Eugenio Paris</i>
16:30		Coffee Break
		CORRELATIONS AND TOPOLOGY IN QUANTUM MATTER II: TOPOLOGICAL BAND STRUCTURES <i>Chair: Johan Chang, Uni Zürich</i>
17:00	611	Experimental results on the predicted Weyl semi-metal PrAlGe <i>Daniel Destráz</i>
17:15	612	Low-energy band structure of Weyl-II candidate MoTe ₂ : a view from infrared spectroscopy <i>Ana Ákrap</i>
17:30	613	Spin reorientation in ferromagnetic type-II Weyl Fe ₃ Sn ₂ <i>Neeraj Kumar</i>
17:45	614	A comparative photoemission spectroscopy and scanning tunneling microscopy study of the topological material ZrTe ₅ <i>Björn Salzmann</i>
18:00	615	Fractional corner charges in spin-orbit coupled crystals <i>Marta Brzezińska</i>
18:15	616	Hopf Insulators: Localized Representation and Observable Phenomena <i>Aleksandra Nelson</i>
18:30	617	High-Pressure Growth of the Newly Predicted Quantum Spin Hall Insulator Pt ₂ HgSe ₃ <i>Enrico Giannini</i>
18:45	618	Emergent topology in a 3D Kane-Mele system: Pt ₂ HgSe ₃ <i>Irène Cucchi</i>
19:00		
19:30		Public Lecture

Wednesday, 28.08.2019, Room G 85

		CORRELATIONS AND TOPOLOGY IN QUANTUM MATTER III: HETEROSTRUCTURES AND VAN DER WAALS MATERIALS <i>Chair: Oded Zilberberg, ETH Zürich</i>
14:00	621	Strain-controlled dimensionality of interface metallicity in LaVO ₃ /LaTiO ₃ multilayers <i>Sophie Beck</i>
14:15	622	LaVO ₃ Thin Films under Epitaxial Strain <i>Hugo Meley</i>
14:30	623	A laser-ARPES study of LaNiO ₃ thin films grown in-situ by sputter deposition <i>Edoardo Cappelli</i>
14:45	624	High sensitivity variable-temperature infrared nanoscopy of conducting oxide interfaces <i>Weiwei Luo</i>
15:00	625	Transport in sub-micrometric devices at the LaAlO ₃ /SrTiO ₃ interface <i>Margherita Boselli</i>

15:15	626	Quantum Rings with Broken Symmetries <i>Jochen Mannhart (i)</i>
15:45	627	Semiconducting van der Waals Interfaces as Artificial Semiconductors <i>Evgeniy Ponomarev</i>
16:00	628	Anomalous Hall Effect in the Quantum Limit in Exfoliated Crystals of the Layered Antiferromagnet Co _{1/3} NbS ₂ <i>Giulia Tenasini</i>
16:15	629	Electrically-tunable flat bands and magnetism in twisted bilayer graphene <i>Tobias Wolf</i>
16:30		Coffee Break
		CORRELATIONS AND TOPOLOGY IN QUANTUM MATTER IV: SUPERCONDUCTORS AND PARENT ELECTRONIC STRUCTURES <i>Chair: Thomas Greber, Uni Zürich</i>
17:00	631	Spin-orbit coupling and self energies in Sr ₂ RuO ₄ <i>Anna Tamai (i)</i>
17:30	632	Three-dimensional Fermi surface of overdoped La-based cuprates <i>Masafumi Horio</i>
17:45	633	Electronic and magnetic tuning of charge order and phonon anomaly in a cuprate spin ladder <i>Yi Tseng</i>
18:00	634	Ultra-High Resolution Neutron Spectroscopy of Low-Energy Spin Dynamics in UGe ₂ <i>Marc Janoschek</i>
18:15	635	Superconductivity without inversion and time-reversal symmetries <i>Mark Fischer</i>
18:30	636	Effect of electron count and chemical complexity in high-entropy alloy (HEA) superconductors <i>Fabian O. von Rohr</i>
18:45	637	Unconventional superconductivity with T _c = 30 K in stoichiometric ThFeAsN <i>Toni Shiroka</i>
19:00		END; Postersession with Apéro
20:30		

ID	MaNEP: CORRELATIONS AND TOPOLOGY IN QUANTUM MATTER POSTER
641	Magneto-optical spectroscopy on TaAs <i>David Santos-Cottin</i>
642	Magneto-transport and optical conductivity of type II Weyl semimetals: TaIrTe ₄ <i>Florian Le Marclé</i>
643	Dynamical Structure Factor analysis of the Bilinear Biquadratic Spin-1 chain <i>Mithilesh Nayak</i>
644	Electronic Phase Transitions in Suspended Graphene Multilayers <i>David Soler Delgado</i>
645	Topological 0D Defect States in 3D Insulators <i>Frank Schindler</i>
646	Cavity-mediated fermionization of long-range interacting bosons <i>Paolo Mognini</i>
647	cancelled
648	Tuning of the depolarization field, built-in voltage and nanodomain structure in ferroelectric thin films and heterostructures <i>Céline Lichtensteiger</i>
649	Weak Localization and Antilocalization in Nodal-Line Semimetals: Dimensionality and Topological Effects <i>Oded Zilberberg</i>

650	<i>cancelled</i>
651	Structure-Property Relations in the $\text{Ca}_{1-x}\text{Sr}_x\text{AlSi}$ Solid Solution <i>Dorota Walicka</i>
652	Superconductivity in the η -carbide-type oxides $\text{Zr}_4\text{Rh}_2\text{O}_x$ <i>Keyuan Ma</i>

Skyrmions in magnetic materials

THIS SESSION HAS BEEN ORGANISED IN COLLABORATION WITH THE ASSOCIATION MANEP.

Thursday, 29.08.2019, Room G 95

Time	ID	SKYRMIONS IN MAGNETIC MATERIALS <i>Chair: Oleg V. Yazyev, EPFL</i>
14:00	661	Topological Magnetization Solitons: From Fundamentals to Technology <i>Stefan Blügel (i)</i>
14:30	662	Topological Magnons and Edge States in Antiferromagnetic Skyrmion Crystals <i>Sebastián Díaz</i>
14:45	663	Imaging topological electron-spin textures by using atomic-resolution Lorentz TEM <i>Xiuzhen Yu (i)</i>
15:15	664	Field-induced skyrmion inversion in the room-temperature chiral magnet $\text{Co}_3\text{Zn}_3\text{Mn}_2$ <i>Victor Ukleev</i>
15:30	665	Investigating Stability and Metastability in the Skyrmion system zinc-doped Cu_2OSeO_3 <i>Peter D. Hatton (i)</i>
16:00	666	Bulk Magnon Modes in Cu_2OSeO_3 Detected by Brillouin Light Scattering Microscopy at Low Temperature <i>Ping Che</i>
16:15	667	Spiral spin-liquid and the emergence of a skyrmion-like state in MnSc_2S_4 <i>Oksana Zaharko</i>
16:30		END; Coffee Break
19:00		Transfer to Dinner
19:30		Conference Dinner

ID	SKYRMIONS IN MAGNETIC MATERIALS POSTER
671	Low frequency resonance mode in the insulating chiral magnet Cu_2OSeO_3 at low temperature <i>Jilei Chen</i>
672	Crystallite size dependency on magnetic phase diagram of Cu_2OSeO_3 <i>Priya Ranjan Baral</i>
673	van Der Waals Epitaxy of Co-Zn-Mn on Graphene for Skyrmionic Applications <i>Anna Kukolova</i>

Quantum Beam Science: bio, materials and fundamental physics with neutrons and X-rays

THIS SESSION HAS BEEN ORGANISED IN COLLABORATION WITH THE SWISS SOCIETY FOR NEUTRON SCIENCE (SGN).

Thursday, 29.08.2019, Room G 85

Time	ID	QUANTUM BEAM SCIENCE: BIO, MATERIALS AND FUNDAMENTAL PHYSICS WITH NEUTRONS AND X-RAYS I: NEUTRONS FROM FUNDAMENTAL PHYSICS TO NOVEL IMAGING METHODS <i>Chair: Markus Strobl, PSI Villigen</i>
14:00	701	Weak measurements in neutron interferometry and experimental tests of general uncertainty relations <i>Stephan Sponar (i)</i>
14:30	702	Yet another approach to tackle the phase problem of diffraction experimentally <i>Martin Fally (i)</i>
15:00	703	Status of the Beam EDM experiment <i>Estelle Chanel</i>
15:20	704	High resolution neutron imaging at Paul Scherrer Institut <i>Pavel Trtik</i>
15:40	705	The PERC facility - prospects of high-precision neutron beta decay experiments <i>Erwin Jericha</i>
16:00	706	From omnidirectional sensitivity to polarized dark-field image with neutron grating interferometry <i>Jacopo Valsecchi</i>
16:20		
16:30		Coffee Break
		QUANTUM BEAM SCIENCE: BIO, MATERIALS AND FUNDAMENTAL PHYSICS WITH NEUTRONS AND X-RAYS II: NEW SPECTROSCOPIES OF QUANTUM MATTER <i>Chair: Luc Patthey, PSI Villigen</i>
17:00	711	Ultrafast quenching of phase coherence in cuprates revealed by TR-ARPES <i>Elia Razzoli (i)</i>
17:30	712	Nonequilibrium Dynamics of Collective Excitations in Quantum Materials <i>Edoardo Baldini (i)</i>
18:00	713	Time resolved Resonant Inelastic X-ray Scattering and Soft X-Ray Diffraction on Quantum Materials at Furka experimental station at Athos SwissFEL <i>Cristian Svetina</i>
18:20	714	Spin wave dynamics in ultrathin yttrium iron garnet measured with x-ray microscopy <i>Joe Bailey</i>
18:40	715	Ultrafast electron vortex beam and temporal holography in ultrafast electron microscope <i>Ivan Madan</i>
19:00		END; Transfer to Dinner
19:30		Conference Dinner

ID	QUANTUM BEAM SCIENCE: BIO, MATERIALS AND FUNDAMENTAL PHYSICS WITH NEUTRONS AND X-RAYS POSTER
721	Correlation between O-vacancies and electrochemical activity of $\text{PrBaCo}_2\text{O}_{5+x}$ ($0.17 \leq x \leq 0.79$) <i>Elena Marelli</i>
722	Design rules for high-temperature magnetic spirals in layered perovskites <i>Tian Shang</i>

723	Spin-Rotation Coupling Observed in Neutron Interferometry <i>Armin Danner</i>
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Applied Physics & Plasma Physics; Earth, Atmosphere and Environmental Physics (combined session)

Friday, 30.08.2019, Room G 91

Time	ID	COMBINED SESSION Chair: Laurie Porte, EPFL
11:15	801	Simulations of artificial populations with competing skills <i>Johannes J. Schneider</i>
11:30	802	Non-linear model-based optimization of stationary tokamak plasma profiles using RAPTOR <i>Simon Van Mulders</i>
11:45	803	Fast Electron Studies using the ECE suite of Diagnostics on TCV <i>Arsène Stéphane Tema Biwole</i>
12:00	804	Plasma Edge Turbulence Characterization Using Gas Puff Imaging on the TCV Tokamak <i>Nicola Offeddu</i>
12:15	805	Thermal characteristics of cellulose in relation to forest fire <i>Alois Raemy</i>
12:30	806	Kerr lens mode-locked femtosecond thin-disk lasers and their application for broadband THz and intracavity high harmonic generation <i>Julian Fischer</i>
12:45	807	Broadband high-power THz generation driven by ultrafast thin-disk laser oscillators <i>Jakub Drs</i>
13:00	808	Laser cooling of C_2 in a digital RF trap for sympathetic cooling of antiprotons <i>Emanuel David Oswald</i>
13:15		END

ID	APPLIED PHYSICS & EARTH, ATMOSPHERE AND ENVIRONMENTAL PHYSICS & PLASMA PHYSICS POSTER
811	First results on the effects of toroidal current on 3D equilibria in magnetic fusion devices <i>Antoine Bailod</i>
812	Impact of edge density fluctuations on Electron-Cyclotron beam propagation and absorption in tokamaks <i>Jean Cazabonne</i>

Biophysics, Medical Physics and Soft Matter

Wednesday, 28.08.2019, Room G 91

Time	ID	BIOPHYSICS, MEDICAL PHYSICS AND SOFT MATTER Chair: Giovanni Dietler, EPFL
17:00	901	Amyloid fibril growth: A multiscale view <i>Ioana Ilie</i>
17:15	902	Effects of gravity on the alpha-synuclein aggregation <i>Jiangtao Zhou</i>

17:30	903	Picture of Wet Electron: A Localized Transient State in Liquid Water <i>Michele Pizzochero</i>
17:45	904	Gap plasmon resonance-enhanced high spatial resolution imaging by photothermal induced resonance in visible spectral range <i>Sergey Sekatski</i>
18:00	905	cancelled
18:15	906	Combined optical and acoustic trapping for optical tomography <i>Mia Kvåle Lovmo</i>
18:30	907	Phase behavior in polydisperse microgel suspensions controlled by spontaneous particle deswelling <i>Urs Gasser</i>
18:45		END
19:00		Transfer to Dinner
19:30		Conference Dinner

ID	BIOPHYSICS, MEDICAL PHYSICS AND SOFT MATTER POSTER
911	Microfabricated cantilever beams for rapid bacterial sensitivity tests <i>Anton Malovichko</i>
912	Simulation of a microfluidic system of droplets <i>Johannes J. Schneider</i>

Pre-Conference Workshops

Monday, 26.08.2019, Room G 55

Time	ID	PRE-CONFERENCE WORKSHOPS
09:00	WS 1	Machine Learning for Experimental Quantum Physics <i>Lecture</i>
11:00		Coffee Break
11:30	WS 2	Programming a Quantum Computer with Examples in Quantum Machine Learning <i>Lecture</i>
12:30		Lunch
14:00	WS 1	Machine Learning for Experimental Quantum Physics <i>Hands-On Workshop Part 1</i>
15:15		Coffee Break
15:45	WS 1	Machine Learning for Experimental Quantum Physics <i>Hands-On Workshop Part 2</i>
17:15		END

Monday, 26.08.2019, Room G 85

Time	ID	PRE-CONFERENCE WORKSHOPS
14:00	WS 2	Programming a Quantum Computer with Examples in Quantum Machine Learning <i>Hands-On Workshop Part 1</i>
15:15		Coffee Break
15:45	WS 2	Programming a Quantum Computer with Examples in Quantum Machine Learning <i>Hands-On Workshop Part 2</i>
17:15		END

Stand: 23.08.2019

On the Origin of the Elements

Celebrating *150 Years of the Periodic Table* in a joint special session of SCNAT and SPS

Friday, 30 August 2019, 11:15 - 13:30, Room G 30

What Physics has to say about the Periodic Table

On 6 March 1869, Dmitry Mendeleev presented *The Dependence between the Properties of the Atomic Weights of the Elements* to the Russian Chemical Society, where for the first time all then known elements have been placed in a table. This table has grown in what is known today as the Periodic Table of Elements. Hundred fifty years later, the United



United Nations
Educational, Scientific and
Cultural Organization



2019
International Year
of the Periodic Table
of Chemical Elements

Nations General
Assembly and
UNESCO pro-
claim 2019 as the
*International Year
of the Periodic
Table of Chem-
ical Elements*

(IYPT2019, <https://www.iypt2019.org>) with activities, talks and events organized around the globe (for events in Switzerland see <https://www.iypt2019.ch/en/switzerland>). Mostly such events highlight the chemical properties of elements, their discovery or their relevance in the environment or in various applications as of today.

On the other hand, it is *Physics* that has lots to say about the origin of all the elements, about the understanding of the atomic shell structure, the structure of atomic nuclei, the inner structure of the protons and neutrons that make up the nuclei and that directly leads us to the physics of elementary particles. Particle beams come into play, when heavy ions are carefully shot on heavy nuclei to create previously unknown transuranium elements up to Oganesson with an atomic number of 118.

Time	ID	ON THE ORIGIN OF THE ELEMENTS - 150 YEARS OF THE PERIODIC TABLE Chair: Claus Beisbart, Uni Bern, SPS section "History & Philosophy of Physics"
11:15	31	<p>Celebrating 150 years Periodic Table, historical remarks and current situation</p> <p><i>Heinz W. Gäggeler, Paul Scherrer Institut, 5232 Villigen and Dept. of Chemistry and Biochemistry, University of Bern, 3012 Bern</i></p> <p>The first periodic table published by D. I. Mendelejeev in 1869 based on atomic masses and had empty positions that paved the way for the discovery of several new elements. With the discovery of Pu by Glenn Seaborg as a transuranium element a worldwide race for synthesis of new elements started, mostly at LBNL (Berkeley, USA) and JINR (Dubna, Russia), later also at GSI (Darmstadt, Germany) and at RIKEN (Japan). Currently, 118 elements are known and approved by IUPAC. The heaviest is Oganesson completing the 7th period of the periodic table. While all elements up to Md have been discovered by chemists, heavier ones were found in physics experiments. Chemical experiments have so far reached atomic number 114 (Fl). Efforts are actually made to extend the periodic table into the 8th period starting with element 119. The ultimate limit of the periodic table is predicted at atomic number 172 being the heaviest element with a stable electron shell structure.</p>
12:00	32	<p>Big Bang and stars, two hot environments for making elements</p> <p><i>Georges Meynet, Geneva Observatory, 51 chemin des Maillettes, CH-1290 Versoix</i></p> <p>The question of the origin of the elements of the Mendeleev table has triggered many lively discussions in the first part of the twentieth century. Some researchers thought that all the elements were produced during the early phase of the evolution of the Universe, while others had the opinion that the stars were the cauldrons in which all the nuclear cooking occurred. I shall explain why neither of these views was correct and how it was possible to make progresses in our understanding. I shall then continue by reviewing the physical principles that govern the evolution of stars and by describing the main nucleosynthetic events at the origin of the elements up to iron. I shall then illustrate the whole process of studying the origin of one element by focussing on the case of oxygen. I shall remind the first ideas about the nuclear processes involved, the astrophysical sites, how this knowledge can be used to make models for the chemical evolution of galaxies and how the predictions of these models can be compared with observational constraints. I shall conclude by describing a present-day highly debated question concerning this element: what is the abundance of oxygen in the Sun?</p>
12:45	33	<p>Stellar Explosions and the Heavy Elements</p> <p><i>Friedrich-Karl Thielemann, Department of Physics, University of Basel, Klingelbergstrasse 82, CH-4056 Basel</i></p> <p>The build-up of elements up to Fe in stars is governed by fusion reactions in stellar burning stages. The sequence of burning stages is led by the principle that ashes of the previous stage become the fuel of the following one. After the depletion of one fuel, not permitting anymore to make up for the continuing radiation losses which make stars shining, contraction sets in, leading to a temperature increase via the gain of gravitational binding energy. This continues until temperatures pass a threshold, permitting the fusion of reacting charged particles and nuclei via velocities (kinetic energies) which can overcome the repelling Coulomb forces. This stabilizes the star for the next burning stage until its fuel is also depleted. This sequence of events continues until nuclei with the highest binding energy per nucleon are reached, i.e. isotopes of Fe and Ni. What options remain to produce heavier nuclei? Neutrons do not experience repelling Coulomb forces and neutron capture on nuclei can take place for any temperature. With sufficient amounts of neutrons available, heavy nuclei can be produced by a sequence of neutron captures and beta-decays up to the heaviest nuclei known in nature. The question is how such amounts of unstable neutrons can be provided in stellar environments. The answer is, either (a) via neutron-producing reaction in stellar evolution, or (b) in explosive events originating under conditions of highest densities, where capture of electrons (with high Fermi energies) on protons produced ample amounts of free neutrons. We will connect this to He-burning in stars, as well as neutron star mergers (only observed recently) and a rare class of supernovae.</p>
13:30		END