

# 1. Photon Impact

## 1.1 Weak Field

- We P1 Photodissociation of chlorophyll monoanions studied using an electrostatic storage ring  
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- We P2 Double photoionization of dimethyl disulfide studied by ES-PEPIICO  
Lucia Helena Coutinho, Minna Patanen, Grazieli Simões, Liu Xiaojing, Flavio Rodrigues, Flavio Rodrigues, Rafael Bernini, Catalin Miron, Gerardo Souza
- We P3 Deep Core Excitation of SF<sub>6</sub> around the sulphur K-edge.  
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- We P4 Photostability studies of prebiotic molecules at the VUV region  
Helder Tanaka, Aline Medina, Manoel Gustavo, Luiz Antonio, Frederico Prudente, Ricardo Marinho
- We P5 Photo-fragmentation and photo-electron spectroscopy of isolated biochromophores  
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- We P6 Atom-fullerene forward and backward inter-Coulombic decay (ICD) resonances in the photoionization of Ar@C<sub>60</sub>  
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- We P7 Photoionization of bonding and antibonding-type atom-fullerene hybrid states: Zn@C<sub>60</sub> versus Cd@C<sub>60</sub>  
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- We P8 Effects of inter-fullerene hybridization on plasmonic and oscillatory photoemission spectra of C<sub>60</sub>@C<sub>240</sub>  
Ruma De, Meghan McCreary, Himadri Chakraborty
- We P9 (e,2e) and (γ,2e) experiments on C<sub>60</sub>  
Paola Bolognesi, Yaroslav Pavlyukh, Michael Schüler, Jamal Berakdar, Lorenzo Avaldi
- We P10 Photoionization of helium inside small fullerenes (He@C<sub>28</sub>, C<sub>32</sub>, C<sub>40</sub>, C<sub>44</sub>, C<sub>50</sub>)  
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- We P11 Photoionization of Xe inside a  $C_{60}^+$  cage: a single-molecule electron interferometer  
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- We P12 Analysis of ionic fragment size distribution in collision of nanosecond laser with the  $C_{60}$  molecule  
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- We P13 Measurement of the Electron Affinity of Gallium and the Fine Structure of  $Ga^-$  using Infrared Photodetachment Threshold Spectroscopy  
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- We P14 Complete pathways including direct double decay processes  
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- We P15 Single Photoionization of Potassium (K)  
Rajesh Kumar, D.D. Singh, S. Kumar
- We P32 Resonance-Enhanced X-ray Multiple Ionization of Heavy Atoms at LCLS  
Benedikt Rudek, Daniel Rolles
- We P33 Electronic and nuclear dynamics in multiphoton X-ray ionization of molecules  
Benjamin Erk, Artem Rudenko, Daniel Rolles

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- We P16 Stark effect in neutral hydrogen by direct integration of the Hamiltonian in parabolic coordinates  
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- We P17 Creation of quasi-one-dimensional high-n strontium Rydberg atoms  
M. Hiller, S. Yoshida, J. Burgdoerfer, S. Ye, X. Zhang, F. B. Dunning
- We P18 Dual Kinetic Balance Approach to Basis-Set Expansions for axially symmetric Dirac equation  
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- We P19 Clocking ultrafast wave packet dynamics in H<sub>2</sub> by using UV pump - UV probe schemes  
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- We P20 Exterior complex scaling method in TDDFT: HHG of Ar atoms in intense laser fields  
Ksenia Sosnova, Dmitry Telnov, Efim Rozenbaum, Shih-I Chu
- We P21 Time delay in atomic photoionization with circularly polarized light  
Anatoli Kheifets, Igor Ivanov
- We P22 Atto-second time-delay in single and double photoionization of noble gas atoms  
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- We P23 Attosecond buildup of collective response in fullerenes  
Jamla Berakdar
- We P24 Optimization of Attosecond XUV Pulses  
Xiaohong Han, Amna Zahid, Dane Laban, Igor Litvinyuk, Dave Kielpinski, Robert Sang
- We P25 Development of a carrier-envelope phase stabilized, few-cycle laser system for novel precision spectroscopy in the time domain  
Tsuneto Kanai, Tomoya Mizunov, Toshiyuki Azuma
- We P28 Spatial splitting of femtosecond laser pulse induced by infrared plasma grating  
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- We P29 Photoelectron spectra of gas target in circular polarization intense laser field  
Tomoya Mizuno, Tsuneto Kanai, Toshiyuki Azuma
- We P30 Combined Effect of Debye Plasma Environment and External Magnetic Field  
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- We P31 Intense-Field Ionization of Monoaromatic Hydrocarbons using Radiation Pulses of Ultrashort Duration: Monohalobenzenes and Azabenzenes  
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## 2. Lepton Impact

## 2.1 Electron-Atom Collisions

- We P49 Relativistic quantum mechanical calculations of electron-impact broadening parameters  
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## 2.2 Electron-Molecule/Cluster Collisions

- We P50 Total ionization cross-sections for Si<sub>2</sub>, SiC, SiC<sub>2</sub> and Si<sub>2</sub>C molecules  
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- We P51 Total cross section of methyl halides by electron impact  
Rahla Naghma, Bobby Antony
- We P52 Electron transfer induced fragmentation of acetic acid  
Filipe Ferreira da Silva, Guilherme Meneses, Diogo Almeida, Paulo Limao-Vieira
- We P53 Interaction based on electron density in low-energy electron scattering  
Hao Feng, Jia Fu, Weiguo Sun, Qunchao Fan
- We P54 A comparative study of Dissociative Ionization of N<sub>2</sub> and CO  
Amrendra Pandey, Bhas Bapat, K R Shamsundar
- We P55 Electron interactions with dry ice: relevance in Martian polar caps and clouds  
Siddharth Pandya, K. N. Joshipura, B. G. Vaishnav
- We P56 Vibrational autodetachment of sulfur hexafluoride anions in a cryogenic ion beam trap  
Sebastian Menk, Klaus Blaum, Swarup Das, Michael Wayne, Michael Lange, Manas Mukherjee, Roland Repnow, Dirk Schwalm, Robert Von, Andreas Wolf
- We P57 Ionic fragmentation of CO and H<sub>2</sub>O under impact of 10 keV electrons: kinetic energy release distributions  
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- We P58 R-matrix calculations for the electron-impact excitation of the Be-like isoelectronic sequence.

- Luis Fernandez-Menchero, Nigel Badnell
- We P59 Electron impact multiple ionization of  $C^+$ ,  $N^+$  and  $O^+$  ions  
Julien Lecointre, Konstantin Kouzakov, Dragoljub Belic, Pierre Defrance, Yuri Popov, Viatcheslav Shevelko
- We P60 Series of Singlet and Triplet Doubly-Excited States of  $C^{4+}$  below the  $N=2$  Threshold of  $C^{5+}$   
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- We P61 Plasma Effect on Fast-Electron-Impact-Ionization of Hydrogen-like Ions  
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- We P62 Spectroscopic study of bismuth ions with an electron beam ion trap  
Hayato Ohashi, Hiroyuki Sakaue, Nobuyuki Nakamura
- We P63 An effective eigenchannel R-matrix calculation of electron-ion scattering processes with spectroscopic precision  
Xiang Gao, Jia-Ming Li
- We P64 Spectroscopy of highly charged tungsten ions with a compact electron beam ion trap  
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- We P65 Dissociative excitation and vibrational excitation of  $Cl^{2+}$   
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## 2.4 Collision Involving Exotic particles

- We P66 Low energy scattering of positron by  $H_2O$   
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- We P67 Dynamics of  $e^+ + H(ns) \rightarrow Ps(n's) + p$  with screened Coulomb potentials  
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- We P68 Differential Cross Sections for Ionization of Argon by 1 keV Positron and Electron Impact  
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- We P69 Antiproton helium collisions in time-dependent density functional theory  
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- We P70 Different representations of continuum in the positron-hydrogen scattering problem  
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- We P71 On the differences in double ionization of atoms by particles and antiparticles  
Robert DuBois, Steven Manson, Toni Santos
- We P72 Cross sections for positronium formation in the collision of proton by hydrogen molecule  
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- We P73 Suppression and Enhancement of Vibrational Feshbach Resonances in Positron Annihilation on Molecules  
J. R. Danielson, A. C. L. Jones, M. R. Natisin, C. M. Surko
- We P74 Measuring Positron-atom Binding Energies through Laser-assisted Photo-recombination  
C. M. Surko, J. R. Danielson, G. F. Gribakin, R. E. Continetti
- We P75 Long range interaction of antiprotonic helium with helium  
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### **3. Heavy Ion Impact**

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- We P81 Electron- and proton-impact excitation of the heaviest H- and He-like ions  
Alexandre Gumberidze
- We P82 State Selective Charge Transfer and Ionization in Low energy Rydberg Ion – Rydberg Atom (Li, Na, K, Rb, Cs) Collisions  
Mukesh Kumar Pandey, Y. K. Ho
- We P83  $4f\sigma$  excitation for L-vacancy production of Mo in collision of highly charged xenon ions near Bohr Velocity  
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### 3.2 Atom-atom/ion-ion Collisions

- We P84 First results from the Double ElectroStatic Ion-Ring Experiment, DESIREE  
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- We P85 Single ionization of diatomic molecules by bare ion impact  
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- We P86 New process observed in collisions between highly charged protonated protein and  $\text{Xe}^{8+}$ ,  $\text{Xe}^{5+}$ ,  $\text{He}^{2+}$  ions  
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- We P87 Ion impact induced ionization/fragmentation dynamics of rare gas dimers  
Markus Schoeffler, H.-K. Kim, J. Titze, F. Trinter, M. Waitz, J. Voigtsberger, H. Sann, M. Mecke, C. Struck, U. Lenz, D. Metz, A. Jung, M. Odenweller, N. Neumann, B. Ulrich, R. Costa, N. Petridis, S. Schoessler, K. Ullmann, R. Grisenti, A. Czasch, O. Jagutzki, L. Schmidt, T. Jahnke, H. Schmidt, J. Becht, H. Gassert, H. Merabet J. Rangama, C. L. Zhou, A. Cassimi, R. Doerner
- We P88 Spectroscopy of weakly-bound complexes in highly excited electronic states: the  $\text{He--I}_2(\text{E}^3\text{P}_g)$  ion-pair state  
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- We P89 Spectral simulations and vibrational dynamics of the fluxional  $\text{H}_5^+$  cation and its isotopologues: signatures of the shared-proton motions

Rita Prosmi, Alvaro Valdes, Gerardo Delgado-Barrio

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Theoretical study on covalently-bonded fullerene dimers  $C_{118}$  and  $C_{119}$  formed through fullerene collisions

Yang Wang, H. Zettergren, P. Rousseau, F. Seitz, T. Chen, M. Gatchell, J. D. Alexander, M. H. Stockett, J. Rangama, J. Y. Chesnel, M. Capron, J. C. Pouilly, A. Domaracka, A. Méry, S. Maclot, H. T. Schmidt, L. Adoui, A. G. G. M., B. A. Huber, H. Cederquist, M. Alcamí F. Martín

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Asymmetric electron capture in HCl collisions with rare gas dimers

Amine CASSIMI, Arnaud Leredde, Xavier Fléhard, Haruo Shiromaru, Jimmy Rangama, Chun Lin Zhou, Wael Iskandar, Stéphane Guillous, Dominique Hennecart, Alain Mery, Benoit Gervais, Jun Matsumoto

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Time Evolution of the internal energy distribution of molecules studied in an electrostatic storage ring, the Mini-Ring

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Excitation energy distributions and statistical dissociation of  $C_{70}^{2+}$  prepared in collisions with  $F^+$  ions at 3 keV

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Stopping and ionization cross section of  $CH_4$  and  $OH_2$  by impact of protons: use of one-center orbital method

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Modeling electron and energy transfer processes in collisions between ions and Polycyclic Aromatic Hydrocarbon molecules

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Growth of ice nanoparticles via uptake of individual molecules: pickup cross sections

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- We P99 Ions colliding with weakly bound clusters of fullerenes  
Henning Zettergren, F. Seitz, P. Rousseau, Y. Wang, T. Chen, M. Gatchell, J. D. Alexander, M. H. Stockett, J. Rangama, J. Y. Chesnel, M. Capron, J. C. Pouilly, A. Domaracka, A Mery, S. Maclot, H. T. Schmidt, L. Adoui, M Alcami, A. G. G. M, F. Martin, B. A. Huber, H. Cederquist
- We P100 Collisions between Polycyclic Aromatic Hydrocarbon ions and noble gases  
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- We P101 Anion production in high-velocity cluster-atom collisions; the electron capture process revisited  
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- We P102 Fragmentation of amino acids induced by collisions with low-energy highly charged ions  
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- We P103 Vibrational ground state properties of the  $H_7^+/D_7^+$  clusters  
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- We P104 Fragmentation dynamics of excited ionized polycyclic aromatic hydrocarbons  
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- We P105 Ionization of Coronene by fast heavy ions: electron DDCS  
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- We P106 The stable  $CO^{2+}$  ions produced in energetic  $O^{5+}$  on CO collisions  
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We P108 Mobilities of Li<sup>+</sup>-attached Butanol Isomers in He Gas  
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We P36 Towards Laser Cooling of Negative Ions  
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We P38 Measurement of Critical Correlations in an Ultracold Bose Gas by  
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We P39 Laser cooling of stored relativistic ion beams with large momentum  
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Matthias Lochmann, Wilfried Nörtershäuser, Colin Clark, Christophor Kozhuharov,  
Thomas Kühl, Shahab Sanjari, Yuri Litvinov, Tino Giacomini, Markus Steck,  
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We P40 Modification of the temperature of trapped cold <sup>87</sup>Rb atoms by an  
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We P41 Amplification via electromagnetically induced transparency in the

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We P42 Difference in cooling dynamics between photo-excited  $C_6^-$  and  $C_6H^-$   
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## 6. Experimental Techniques

- We P43 First light on 3d photoionization of multiply charged xenon ions: a new photon-ion merged beam setup at PETRA III  
Sandor Ricz, Stefan Schippers, Ticia Buhr, Kristof Holste, Alexander Borovik, Jonas Hellhund, Heinz-Jürgen Schäfer, Daniel Schury, Stephan Klumpp, Karolin Mertens, Michael Martins, Roman Flesch, Georg Ulrich, Eckart Rühl, Julian Lower, Till Jahnke, Daniel Metz, Lothar Schmidt, Markus Schöffler, Joshua Williams, Reinhard Dörner, Leif Glaser, Frank Scholz, Jörn Seltmann, Jens Viefhaus, Alexander Dorn, Andreas Wolf, Joachim Ullrich, Alfred Mueller
- We P76 Variable entry Biased Paracentric Hemispherical Deflector: Experimental results on energy resolution for different entry positions  
Mevlut Dogan, Melike Ulu, Giannis Gennerakis, Theo Zouros
- We P77 High-power electron gun for electron-ion crossed-beams experiments  
Alfred Mueller, Stefan Schippers, Jörg Jacobi, Wei Shi, Alexander Borovik Jr
- We P109 SMILETRAP –A Double Penning Trap for High Precision Mass Measurements with Highly Charged Ions  
Yao Ke, Yaming Zou, Reinhold Schuch,
- We P110 SPARC Experiments in the High-Energy Storage Ring HESR at FAIR  
Yuri Litvinov, Thomas Stöhlker
- We P111 Detection of atomic and molecular MeV projectiles using an x-ray CCD camera  
Marin Chabot, Guillaume Martinet, Karine Béroff, Thomas Pino, Sandra Bouneau
- We P112 A setup for ion-beam emittance measurements employed to diagnose plasma ion thrusters

## 7. Related Topics

- We P26 Dirac-Fock plus core-polarization calculations of electronic quadrupole moments of D states for single ion clocks  
Chengbin Li, Yongbo Tang, Haoxue Qiao, Tingyun Shi
- We P27 Ultrafast dynamics of hollow atoms based on master equation approach  
Yongqiang Li, Cheng Gao, Jianmin Yuan
- We P34 X-ray laser spectroscopy with an electron beam ion trap at LCLS  
Sven Bernitt, Gregory Brown, Jan Rudolph, Rene Steinbrügge, Alexander Graf, Maurice Leutenegger, Christian Beilmann, Natalie Hell, Sita Eberle, Sascha Epp, Katharina Kubicek, Volkhard Mäkel, Stefan Schippers, William Schlotter, Martin Simon, Elmar Trübert, Joshua Turner, Steven Kahn, Edward Magee, Alfred Müller, Andrey Surzhykov, Zoltan Harman, Christoph Keitel, Joel Clementson, Frederick Porter, Andy Rasmussen, Joachim Ullrich, Peter Beiersdorfer, José Ramon
- We P44 Investigation of Laser-induced breakdown spectroscopy of uranium element  
Dacheng Zhang, Ying Zhang, Xiaolong Zhu, Shulong Wang, Jie Yang, Dongmei Zhao, Xinwen Ma
- We P45 Inelastic Squared Form Factors of Valence-shell Excitations of Nitrogen Studied by High-resolution Inelastic X-ray Scattering  
Peng Yi Geng
- We P46 Quasistationary resonances in length and velocity gauges in the context of multiphoton dissociation of  $\text{HD}^+$   
B. Dutta, S. S. Bhattacharyya
- We P47 Spectroscopy of autoionization resonances for lanthanides atoms with account of laser field and chaos effects  
Andrey Svinarenko
- We P48 Cooperative laser electron- $\gamma$ -nuclear phenomena in optics and spectroscopy of atoms, molecules and clusters  
Alexander Glushkov
- We P78 Electron shakeoff following the  $\beta^+$  decay of trapped  $^{35}\text{Ar}^+$  ions

- Xavier Flechard
- We P79 Fundamental Atomic Process in Source Development for Beyond EUV Litho-graphy and “Water Window” imaging  
Bowen Li
- We P113 Fine-structure energy levels and radiative rates in Si-like Cobalt  
Govind Gupta, Alfred Msezane
- We P114 Fine-structure energy levels, oscillator strengths and lifetimes in Al-like Chromium  
Govind Gupta, Alfred Msezane
- We P115 The differential protein expression between 2D and 3D cultures after exposure to C-beam  
Gang Xue
- We P116 Laser Spectroscopy of the 2s-Hyperfine Splitting in Lithium-like Bismuth  
Rodolfo Marcelo Sanchez Alarcon
- We P117 Electronic factors for isotope shifts  
Michel Godefroid, Thomas Carette, C ádríc Naz é Stephan Fritzsche, Per Jönsson
- We P118 Large-scale calculations of the fine structures of  $2^3P$  states for helium-like ions using relativistic configuration interaction method  
Yongbo Tang, Chengbin Li, Haoxue Qiao, Tingyun Shi
- We P119 Border Between Atomic and Nuclear Physics: Experiments with Stored Highly-Charged Ions  
Yuri Litvinov, Fritz Bosch, Christophor Kozhuharov, Xinwen Ma, Thomas St öhlker, Nicolas Winckler, Hushan Xu, Yuhu Zhang
- We P120 Theoretical study on the electronic structure and transition properties of neptunium and its ions  
Chenzhong Dong, I. A. Saber, Xiangli Wang, Chenzhong Dong
- We P121 Magnetic field induced transitions in Ne- and Be-like ions for plasma diagnostics and double photon decay rate determination  
Jon Grumer, Jiguang Li, Wenxian Li, Martin Andersson, Tomas Brage, Roger Hutton, Per Jönsson, Yang Yang, Yaming Zou
- We P122 Full relativistic studies of the ground state electronic structure of alkali elements up to  $Z=119$   
Deling Zeng, Xiang Gao, Rui Jin, Jia-Ming Li

- We P123 Fluorescence active autoionizing states of highly stripped helium-like ions  
Tapan kumar mukhopadhyay, Jayanta kumar, S. Bhattacharyya, P. K. Mukherjee, S. Kasthurirangan, J. P. Santos, L. C. Tribedi
- We P124 Two-electron atoms under spherical confinement  
Sukmahoy Bhattacharyya, J. K. Saha, T. K. Mukhopadhyay
- We P125 Electroweak interaction and parity nonconservation in heavy finite Fermi-systems: Spin-dependent effects and weak interaction enhancement  
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- We P126 Theoretical spectroscopy of multicharged ions: Advanced relativistic quantum defect and model potential approach  
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- We P127 The energy shifts and widths and strong, K-N nuclear interaction corrections in spectroscopy of the hadronic atoms  
Anastasiya Shakhman
- We P128 X-ray spectroscopy of the pionic atoms: Transition energies and hyperfine structure  
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- We P129 K Transition Energies and Transition Yields for He-, Li-, Be-, B-like and C-like Lanthanum Ions  
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- We P130 Finite nuclear size effect on hydrogen-like ions  
Yonghui Zhang
- We P131 MCDF calculation and analysis of M1 lines from tungsten ions in LHD and EBIT plasmas  
Fumihiro Koike, Izumi Murakami, Daiji Kato, XiaoBin Ding, Nobuyuki Nakamura, Chihiro Suzuki, Hiroyuki A. Sakaue
- We P132 Proton-induced ionization cross sections of isolated nucleobases  
C. Champion, M.E. Galassi, P.F. Weck, S. Incerti, M.A. Quinto, Z. Francis, O.A. Fojon, R.D. Rivarola, J. Hanssen

# 1. Photon Impact

## 1.1 Weak Field

- Th P1 Off center effect on the photoabsorption spectrum of the Xe@C<sub>60</sub> endohedral fullerene  
Zhifan Chen, Alfred Z Msezane
- Th P2 Photoabsorption spectrum of the Ce@C<sub>82</sub> endohedral fullerene  
Zhifan Chen, Alfred Z Msezane
- Th P3 Single photon double ionization of Helium at 800 eV observation of the Quasi Free Mechanism  
Markus Schoeffler, Till Jahnke, Markus Waitz, Florian Trinter, Ute Lenz, Christian Stuck, M. Jones, M. S. Pindzola, A. Landers, Ali Belkacem, C. L. Cocke, James Colgan, Anatoli Kheifets, Igor Bray, Horst Schmidt-Boecking, Reinhard Doerner, Thorsten Weber
- Th P4 Continuum-continuum transitions between resonant states using the RABITT technique  
Álvaro Jiménez, Luca Argenti, Fernando Martín
- Th P5 Dissociation Dynamics and Molecular Imaging of Methane following Photoionization at the Carbon K-Edge  
J. B. Williams, C. Trevisan, Till Jahnke, Irina Bocharova, Felix Sturm, C. W. McCurdy, Ali Belkacem, Reinhard Doerner, Thorsten Weber, Allen Landers
- Th P6 Photoionization cross section of Fe<sup>7+</sup> ion  
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- Th P7 Evidence for spontaneous oscillations of electron emitter sites: A show case for position entanglement in ordinary space  
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Th P59 Total ionization cross-sections for fluoro acetylene molecule

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Th P66 Computation of electron impact total cross sections for ethanol over

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Th P80 Interference between direct ionisation and positronium formation in continuum in positron-hydrogen collisions

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Th P81 Low energy elastic positron collisions with OCS molecules

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Th P82 Ionization of He by slow antiproton impact: total and differential ionization cross sections

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Th P93 Charge transfer between slow highly charge xenon ion and magnesium atom

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Th P95 X-ray Emission Measurements following Charge Exchange between  $C^{6+}$  and He

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Th P96 Projectile q-dependence of electron DDCS in fast ion-He atom collision

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- Th P106 Long-range interactions between excited helium atoms and ground-state noble gas atoms  
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- Th P107 Single and multiple ionization of rare gases by  $\text{H}^0$  impact  
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- Th P112      Study of electron capture and ionization in proton collisions with  $\text{N}_2$   
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- Th P113      Electron DDCS in ionization of  $\text{H}_2\text{O}$  by 72 MeV  $\text{O}^{8+}$  ions:  
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- Th P114      A collision process responsible for widespread formation of  $\text{H}^-$   
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Th P121 Double and single differential cross sections for secondary electron production in 6.0 MeV/u O<sup>8+</sup> +H<sub>2</sub>O collisions

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- Th P27      Nano-plasma Formation and Thermal Electron Emission of Neon Clusters Induced by Extreme Ultraviolet Free Electron Laser Pulses  
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- Th P32      High-brilliance double-stage soft x-ray laser pumped by multiple pulses applied in grazing incidence

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# 1. Photon Impact

## 1.1 Weak Field

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- Fr P10 Photoionization cross sections of the  $3s3p\ ^3P$  state of Mg: the discrepancy between theory and experiment  
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- Fr P16 K-Shell Photoionization of Oxygen  
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- Fr P26 The transition from coherent behavior to random order  
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- Fr P27 Relativistic R-matrix studies of photoionization processes of Ar<sup>5+</sup>  
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- Fr P28 Time-dependent theory of sequential double ionization of neon  
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- Fr P29 Electron localization involving doubly-excited states in broadband XUV ionization of H<sub>2</sub>  
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- Fr P30 Double K-shell ionization in C<sub>2</sub>H<sub>2n</sub>(n=1,3), CO and N<sub>2</sub>  
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- Fr P31 Vibrationally resolved molecular frame photoelectron angular distributions of diatomic and polyatomic molecules  
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- Fr P32 Effects of molecular potential and geometry on atomic core-level photoemission over an extended energy range – the case study of CO molecule  
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- Fr P33 Dissociation of  $\sigma^*$  resonances in chloromethanes by resonant inelastic x-ray scattering  
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- Fr P34 Spectroscopy and kinetics of IR laser interaction with atmospheric molecules. Effects of cooling and chaos  
Alexander Glushkov, Olga Khetselius, Oleg Grushevsky, Yuliya Bunyakova
- Fr P35 Renner-Teller Effect in  $\text{HCCl}^+$  Studied by High Resolution Photoelectron Spectroscopy  
Wei Sun, Yuxiang Mo
- Fr P36 Sturmian approach to single photoionization of  $\text{CH}_4$   
Carlos M. Granados-Castro, Lorenzo U. Ancarani, Gustavo Gasaneo, Dario M. Mitnik
- Fr P37 Time-delay in the valence photoemission of Ar confined in  $\text{C}_{60}$   
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- Fr P38 XUV induced dynamical response for the  $\text{C}_{60}$  plasmon, a new way to investigate attosecond photoemission in complex systems  
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## 1.2 Strong Field

- Fr P39 Massively parallel ionization in strong X-ray pulses: Revealing dynamical and spatial correlations in finite samples  
Ulf Saalmann, Jan M. Rost
- Fr P40 Probing the transition from molecular to atomic photo-absorption with XUV FEL radiation  
Arne Senftleben, Kirsten Schnorr, Denis Anielski, Georg Schmid, Kristina Meyer, Artem Rudenko, Tatiana Marchenko, Marc Simon, Yuhai Jiang, Lutz Foucar, Matthias Kubel, Matthias F. Kling, Stefan Dusterer, Rolf Treusch, Claus-Dieter Schroter, Thomas Pfeifer, Joachim Ullrich, Robert Moshhammer
- Fr P41 Tracing Interatomic Coulombic Decay in Neon Dimers by XUV pump-probe Experiments at FLASH  
Kirsten Schnorr, Arne Senftleben, Moritz Kurka, Artem Rudenko, Lutz Foucar, Thomas Pfeifer, Kristina Meyer, Georg Schmid, Jakob Kunz, Alexander Broska, Denis Anielski, Matthias Kuebel, Matthias Kling, Subhendu Mondal, Tetsuya



Tachibana, Kiyoshi Ueda, Tatiana Marchenko, Marc Simon, Joachim Ullrich, Guenter Brenner, Rolf Treusch, Claus-Dieter Schroeter, Robert Moshhammer

- Fr P42 **Strong field double ionization of Helium with ultra-short phase stabilized circularly polarized laser pulses**  
Markus Schoeffler, Xinya Xie, Stefan Roither, D. Kartashov, Andrius Baltuska, Markus Kitzler
- Fr P43 **Impulsive Control of Fano Resonances**  
Christian Ott, Andreas Kaldun, Kristina Meyer, Philipp Raith, Martin Laux, Alexander Blättermann, Thomas Ding, Yizhu Zhang, Jörg Evers, Christoph H. Keitel, Chris H. Greene, Thomas Pfeifer
- Fr P44 **Low-energy structures from soft recollisions: Basic mechanism and detection with few-cycle pulses**  
Ulf Saalmann, Jan M. Rost
- Fr P45 **Subcycle dynamics of Coulomb asymmetry in strong elliptical laser fields**  
Min Li, Yunquan Liu
- Fr P46 **Identification of strong one-step two-photon absorption in a cascade three-level system**  
Ji-Cai Liu, Lei Chen, Ye-Qi Zhang
- Fr P47 **Time-resolved resonant photoionization of He using a time-dependent Feshbach method with ultrashort laser pulses**  
Carlos Mario, José Luis Sanz-Vicario
- Fr P48 **The interaction of metastable neon and few cycle laser pulses**  
James Calvert, Han Xu, Dane Laban, Rohan Glover, Igor Litvinyuk, David Kielpinski, Robert Sang
- Fr P49 **Ultra-low energy electron emission in ionization with long-wavelength laser pulses**  
Nicolas Camus, Judith Dura, Alexandre Thai, Alexander Britz, Michaël Hemmer, Mathias Baudisch, Lutz Fechner, Andreas Krupp, Arne Senftleben, Claus Dieter, Thomas Pfeifer, Joachim Ullrich, Robert Moshhammer, Jens Biegert
- Fr P50 **Realization of stimulated electronic x-ray Raman scattering**  
Clemens Weninger, Michael Purvis, Duncan Ryan, Richard A. London, John D. Bozek, Christoph Bostedt, Alexander Graf, Gregory Brown, Jorge J. Rocca, Nina Rohringer

- Fr P51 Mapping the decay of double core hole states of atoms and molecules  
Melanie Mucke, Vitali Zhaunerchyk, Richard J. Squibb, Magdalena Kamińska, John H.D. Eland, Peter von der Meulen, Peter Salén, Per Linusson, Richard, D. Thomas, Mats Larsson, Leszek J. Frasinski, Marco Siano, Timur Osipov, Li Fang, Brendan F. Murphy, Nora Berrah, Lutz Foucar, Joachim Ullrich, Koji Motomura, Subhendu Mondal, Kiyoshi Ueda, Robert Richter, Kevin C. Prince, Maria Novella, Piancastelli, James M. Glowinski, James Cryan, Ryan Coffee, Christoph Bostedt, John David Bozek, Sebastian Schorb, Marc Messerschmidt, Osamu Takahashi, Shin-ichi Wada, Raimund Feifel
- Fr P52 The investigation on atoms and molecules in the intense laser field with time-dependent Hartree-Fock method  
Shilin Hu, Zengxiu Zhao, Tingyun Shi
- Fr P53 Correlated dynamics of electron passing through a Doubly Excited Complex  
Nicolas Camus, Bettina Fischer, Manuel Kremer, Vandana Sharma, Artem Rudenko, Boris Bergues, Matthias Kübel, Nora G. Kling, Matthias Kling, Thomas Pfeifer, Joachim Ullrich, Robert Moshhammer
- Fr P54 Dissociative ionization of NO in few-cycle intense laser fields : Effects of  $\pi$ - $\sigma$  electronic transition  
Tomoyuki Endo, Mizuho Fushitani, Akitaka Matsuda, Akiyoshi Hishikawa
- Fr P55 N<sub>2</sub>O ionization and dissociation dynamics in intense few cycle femtosecond laser radiation.  
Reza Karimi
- Fr P56 Coherent superposition of two rotational states of carbon monoxide: Tracing a quantum rotor in space and time  
Andreas Kickermann, Andreas Przystawik, Lasse Schroedter, Tim Laarmann
- Fr P57 Structure parameters in molecular tunneling ionization theory  
Jun-Ping Wang, Wei Li, Song-Feng Zhao
- Fr P58 Generation of isolated 38as pulse from the oriented CO molecule  
Yun Pan, Song-Feng Zhao, Xiao-Xin Zhou
- Fr P59 Carrier-Envelope Phase effect for Dissociation of Molecular Hydrogen  
Han Xu, J-P Maclean, D.E. Laban, W.C. Wallace, D. Kiełpinski, R.T. Sang, I.V. Litvinyuk

- Fr P60 An extreme ultraviolet interferometer using high order harmonic generation  
D.E. Laban, A.J. Palmer, W.C. Wallace, N.S. Gaffney, M.J. Pullen, D. Jiang, H.M. Quiney, I.V. Litvinyuk, D. Kielpinski, R.T. Sang
- Fr P61 Time-resolved imaging of multielectron wavepackets in atoms  
Lutz Fechner, Nicolas Camus, Joachim Ullrich, Thomas Pfeifer, Robert Moshhammer
- Fr P62 Attosecond Transient Absorption Spectroscopy of doubly-excited states in helium  
Luca Argenti, Christian Ott, Thomas Pfeifer, Fernando Mart ́n
- Fr P63 Theoretical study of the macroscopic characters of the gas medium affecting the generation of attosecond pulses  
Xiaoyong Li, Guoli Wang, Xiaoxin Zhou

## 2. Lepton Impact

### 2.2 Electron-Molecule/Cluster Collisions

- Fr P69 Excitation functions for positively charged fragments produced by electron impact on adenine  
Peter van der Burgt, S. Eden, F. Mahon, S. Finnegan
- Fr P70 Excitation functions for positively charged fragments produced by electron impact on thymine  
Peter Van Der Burgt, F. Mahon, S. Finnegan
- Fr P71 Ionization of water by electron impact in (e,2e) processes  
Ladislau Nagy, Istv ́n T ́th
- Fr P72 Triple differential cross sections for liquid water ionization by impact of fast electrons.  
Omar Fojon, Carlos Stia, Rodolphe Vuilleumier, Marie Francoise, Maria Laura
- Fr P73 Electron Interactions with Explosives  
Katrin Tanzer, Johannes Postler, Carolina Matias, Andreas Mauracher, Paul Scheier, Chris A. Mayhew, Paulo Limao-Vieira, Stephan Denifl

### 2.3 Electron-Ion Collisions

- Fr P74 Polarization of the strongest  $nf \rightarrow 3d$  ( $n = 4, 5, 6$ ) radiative lines

- emitted from tungsten ions following EIE and DR processes  
Chenzhong Dong, Zhongwen Wu, Xiaoyun Ma
- Fr P75 Dielectric recombination of the 4p and 4d open sub-shell tungsten ions  
Maijuan Li, Yanbiao Fu
- Fr P76 Dielectronic recombination experiment of P-like Tin on HIRFL-CSRm at Lanzhou  
Weiqing Xu, Xinwen Ma
- Fr P77 Dielectronic recombination of boronlike  $\text{Si}^{9+}$  ions at the heavy-ion storage ring TSR  
Stefan Schippers, Kaija Spruck, Andreas Wolf, Daniel Wolf, Roland Reppow, Oldrich Novotny, Alfred Mueller, Michael Lestinsky, Claude Krantz, Michael Hahn, Manfred Grieser, Arno Becker, Dietrich Bernhardt
- Fr P78 Dielectronic recombination of berylliumlike  $\text{Si}^{10+}$  ions at the heavy-ion storage ring TSR  
Stefan Schippers, Dietrich Bernhardt, Arno Becker, Carsten Brandau, Manfred Grieser, Michael Hahn, Claude Krantz, Michael Lestinsky, Alfred Mueller, Oldrich Novotny, Roland Reppow, Daniel Wolf, Kaija Spruck, Andreas Wolf
- Fr P79 Dielectronic recombination of berylliumlike  $\text{Xe}^{50+}$  ions: Measurement and theoretical calculations  
Stefan Schippers, Dietrich Bernhardt, Carsten Brandau, Christophor Kozhuharov, Alfred Müller, Sebastian Böhm, Fritz Bosch, Zoltan Harman, Jörg Jacobi, Stefan Kieslich, Holger Knopp, Paul Mokler, Fritz Nolden, Wei Shi, Zbigniew Stachura, Markus Steck, Thomas Stoehlker
- Fr P80 Dielectronic recombination of lithiumlike  $\text{Xe}^{51+}$  ions: Storage ring experiment and theoretical calculations  
Stefan Schippers, Dietrich Bernhardt, Carsten Brandau, Christophor Kozhuharov, Alfred Müller, Sebastian Böhm, Fritz Bosch, Zoltan Harman, Jörg Jacobi, Stefan Kieslich, Holger Knopp, Paul Mokler, Fritz Nolden, Wei Shi, Zbigniew Stachura, Markus Steck, Thomas Stoehlker
- Fr P81 Recombination of open-4f-shell  $\text{W}^{18+}$  ions with free electrons  
Stefan Schippers, Kaija Spruck, Andreas Wolf, Nigel Badnell, Claude Krantz, Arno Becker, Dietrich Bernhardt, Manfred Grieser, Michael Hahn, Oldrich Novotny, Daniel Wolf

- Fr P82 Storage-ring measurement of the hyperfine induced  $2s2p\ ^3P_0 \rightarrow 2s^2\ ^1S_0$  transition rate in berylliumlike sulfur  
Stefan Schippers, Dietrich Bernhardt, Manfred Grieser, Michael Hahn, Claude Krantz, Michael Lestinsky, Alfred Mueller, Oldrich Novotny, Roland Repnow, Daniel Wolf, Andreas Wolf
- Fr P83 Suppression of Dielectronic Recombination at Finite Densities  
Thomas Gorczyca, Dragan Nikolic, Kirk Korista, Gary Ferland, Nigel Badnell
- Fr P84 Measurement of the angular distribution of Dielectronic Recombination into highly charged Krypton ions  
Stanislav Tashenov
- Fr P85 Application of electron impact relativistic distorted wave cross sections for the diagnostic of inductively coupled argon plasma  
Rajesh Srivastava, Dipti Dipti, Reetesh Gangwar, Alan Stauffer
- Fr P86 Electron excitation of L-shell electrons from Ne-like and F-like tungsten ions  
Rajesh Srivastava, Dipti Dipti, Tapasi Das, Lalita Sharma
- Fr P87 Indirect processes in x-ray line emissions of  $5f \rightarrow 3d$  transitions of  
Zhimin Hu
- Fr P88 Direct and indirect processes in electron-impact ionization of  $1s^2\ ^1S_0$  ground-state and  $1s2s\ ^3S_1$  metastable He-like  $N^{5+}$  ions  
Alfred Mueller, Alexander Borovik, Kurt Huber, Stefan Schippers
- Fr P89 Electron Impact ionization of ethylene  
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- Fr P90 Electron-impact ionization of 4d-shell xenon and tin ions  
Alfred Mueller, Alexander Borovik Jr, Mohammad Gharaibeh, Joachim Rausch, Jan Rudolph, Stefan Schippers, Pierre-Michel Hillenbrand
- Fr P91 Dissociative recombination of  $NH^+$   
Bian Yang, Oldrich Novotny
- Fr P92 Polarization of M2 line emitted from highly-charged beryllium-like ions following electron-impact excitation  
Y. L. Shi, Chenzhong Dong, Stephan Fritzsche
- Fr P93 Electron-impact excitation of Fe VII  
Oleg Zatsarinny, Swaraj Tayal

### 3. Heavy Ion Impact

#### 3.1 Ion-Atom Collisions

Fr P99 Charge transfer and association of  $\text{Na}^+$  with  $^{87}\text{Rb}$  atoms from extreme-low to intermediate energies

Yan Lingling, Jianguo Wang, Yizhi Qu

### 4. Ultracold Atomic and Molecular Physics

Fr P100 Multiconfiguration Dirac-Hartree-Fock calculations of EDM for Ra, Hg, Yb

Gediminas Gaigalas

Fr P101 Effect of atomic mass on ultra cold H-H scattering parameters using non adiabatic CCA model

Sumana Chakraborty

Fr P102 The atom and atom scattering at cold-energies

Hasi Ray

Fr P103 Ultracold collisional processes in atomic traps

Vladimir Melezhik

Fr P104 S-wave scattering lengths for cold Ca-Li and Mg-Li collisions

JiCai Zhang, Jinfeng Sun

Fr P105 Dynamic polarizabilities for the low lying states of  $\text{Ca}^+$

yongbo Tang, Haoxue Qiao, Tingyun Shi, Jim Mitroy

Fr P106 Interaction of Ag(5s) and Ag(5p) with noble gas atoms

hossein Sadeghpour, Jerome Loreau, Alex Dalgarno

Fr P107 Feshbach resonances in  $^6\text{Li}-^{133}\text{Cs}$  with asymptotic bound model

Shi Ting-Yun, Meng-Shan Wu

Fr P108 Ion-Neutral Chemistry in the Cold Regime

Olivier dulieu, Felix H. J. HallPascal Eberle, Gregor Haji, Maurice Raoult, Mireille Aymar, nadia bouloufa, Stefan Willitsch

Fr P109 Optical trapping of cold molecules and population transfer

olivier dulieu, Dimitri Borsalino, Beatriz Londono, Romain Vexiau, Maxence Lepers, Mireille Aymar, Eliane Luc, Nadia Bouloufa

- Fr P110 Formation of  $\text{NH}^+$  in collisions of  $\text{N}^+$  with para- or ortho- $\text{H}_2$  at low temperatures – an experimental study  
Radek Plasil, Illia Zymak, Michal Hejduk, Dmytro Mulin, Juraj Glosik, Dieter Gerlich

## 5. Collision Involving Condensed Matter

- Fr P131 Cosmic ray impact on astrophysical ices: heavy ion irradiation of methane laboratory simulations  
C. F. Meja, A. L. F. de Barroso, V. Bordalo, E. F. da Silveira, P. Boduchz, Domarackaz and H. Rothardz

## 6. Experimental Techniques

- Fr P64 A novel method for generation and amplification of femtosecond pulses pumped by a nanosecond laser  
Tsuneto Kanai, Tomoya Mizuno, Toshiyuki Azuma
- Fr P94 A Highly Polarised Temperature Controlled Atomic Hydrogen Beamline  
Peter Caradonna, Martin Diermaier, Michael Wolf, Barbara Wünschek, Oswald Massiczek, Nazli Dilaver, Bernadette Kolbinger, Chloe Malbrunot, Clemens Sauerzopf, Johann Zmeskal, Eberhard Widmann
- Fr P111 The Movement Control System for Beam Detection Device  
Yu Yuanjuan, Yanyu Wang, Fuyuan Lin
- Fr P112 The development of beam intelligent identification system based on WinPAC  
JinFu luo, Yanyu Wang, Yucheng Feng
- Fr P113 The Development of HIRFL-CSR Water Leakage Early Warning System  
Yun jie Li, Yan Yu, De Tai, Jia Yin, Wen Xiong, Li Li, Jian Chuan, Fu Yuan
- Fr P114 Design of CSRM Deflector Control System  
Fuyuan Lin, Yanyu Wang, Yanjuan Yu
- Fr P115 Design of Ethernet-based Control System for HIRFL-CSR Digital Power Supply  
Huajian Zhang, Fengjun Wu, Rongkun Wang, Youxin Chen, Daqing Gao

- Fr P116 The design of a online data analysis software for CCNS  
Wenxiong Zhou, Yanyu Wang
- Fr P117 Cross-talk studies on FPCB of double-sided silicon micro-strip detector  
Lei Yang, Zhankui Li
- Fr P118 The platforms for space radiation research in IMP  
Dan Xu, Jufang Wang, Guangming Zhou
- Fr P119 The SHER-HIAF Ring Lattice Design  
Gao Xiang
- Fr P120 The HITRAP ion decelerator facility and CRYRING status  
Zoran Andelkovic
- Fr P121 Investigation of LaBr<sub>3</sub>:Ce scintillator with excellent property  
Jinda Chen, Zhengguo Hu
- Fr P122 NIEL studies on of double-sided silicon micro-strip detector  
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- Fr P123 320 kV High Voltage platform at IMP  
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- Fr P124 The interdisciplinary high energy heavy ion microbeam system at IMP  
Guanghua Du, Jinlong Guo, Ruqun Wu, Lina Sheng, Mingtao Song, Guoqing Xiao
- Fr P133 Research on Voltage-source PWM Rectifier based on Space-vector Control Technology used in Accelerator Power Supply  
Fengjun Wu, Daqing Gao

## 7. Related Topics

- Fr P65 Vibrational and Electronic spectral studies of 2-(Bromoacetyl)benzo(b)furan – A combined Experimental and Theoretical Study  
Adamilli Veeraiah, V Veeraiah
- Fr P66 Radiative and Dielectronic Recombination Rates for Li-like Ions with Atomic Numbers  $4 \leq Z \leq 18$   
Vedat Karakas
- Fr P67 Forbidden and Unexpected Transitions in Atomic Ions



- Tomas Brage
- Fr P68 Autoionization widths of double K-vacancy states of Neon ions: A close-coupling calculation  
Liu Yanpeng, Zeng Jiaolong
- Fr P95 Massive Calculations of Atomic Properties with High Accuracy for Boron-like Iron and other Ions of Astrophysical Interest  
Per Jönsson, Jürgen Ekman, Stefan Gustafsson, Henrik Hartman, Richard du, Gediminas Gaigalas, Michel Godefroid, Charlotte Froese
- Fr P96 A simulation package for soft X-ray and EUV spectroscopy of astrophysical and laboratory plasmas in different environments  
Guiyun Liang, Fang Li, Feilu Wang, Yong Wu, Jiayong Zhong, Gang Zhao
- Fr P97 Borromean states of exotic systems under screened coulomb interactions  
Jayanta Kumar Saha, Dutta, Bhattacharyya, T.K. Mukhopadhyay
- Fr P98 Application of the few body quantum theory of scattering for guided control of chemical reaction and creation of the new molecular structures  
Serg Pozdneev
- Fr P125 Quantitative analysis of mitochondrial DNA mutations caused by heavy-ion radiation  
Yang He, Xin Zhou, Hong Zhang
- Fr P126 Differential expression of miRNA between the monolayer and three dimensional cells after ionizing radiation  
Dong Pan
- Fr P127 The role of PCBP1 in cervical cancer HeLa cells  
Cuixia Di, Hong Zhang
- Fr P128 Carbon ions beam induced HepG2 cell apoptosis by the mitochondrial oxidative damage  
Chao Sun, Hong Zhang, Zhenhua Wu, Yang Liu, Cuixia Di
- Fr P129 The impact of carbon ion irradiation on testis and cauda epididymis histology in infant mice  
Hongyan Li, Hong Zhang, Cuixia Di
- Fr P130 The geometric characteristics of hydrogen bond revealed from the small water clusters

Yan Song, Hongshan Chen

Fr P132 Perspective for a compact electrostatic storage ring

Mohamed O. A. El Ghazaly

# 1. Photon Impact

## 1.1 Weak Field

- Mo P1      Production of high-n strontium Rydberg atoms  
S. Ye, T. C. Killian, F. B. Dunning, M. Hiller, S. Yoshida, J. Burgdoerfer
- Mo P2      Two-electron interference in angular resolved double photoionization of Mg  
Emma Sokell, Paola Bolognesi, Anatoli Kheifets, Igor Bray, Stephan Safgren, avalidi Lorenzo
- Mo P3      A generalized Sturmian approach to photoionization of hydrogen by electromagnetic pulses  
Ilan Gomez, Marcelo J. Ambrosio, Gustavo Gasaneo, Dario M. Mitnik, Bernard Piraux, Diego Arbo
- Mo P4      Double photoionization cross sections of helium using a simple set of outgoing Sturmian Functions  
Juan M. Randazzo, Dario M. Mitnik, Lorenzo Ancarani, Flavio D. Colavecchia, Gustavo Gasaneo
- Mo P5      Relativistic R-Matrix calculations for the photoionization cross sections of C II  
Luyou Xie, J G Wang, Y Z Qu, C Z Dong
- Mo P6      Experimental lifetimes in Cr II obtained by two-photon laser excitation  
Lars Engstrom, Hans Lundberg, Hampus Nilsson, Henrik Hartman
- Mo P7      Attosecond VUV Coherent Control of Molecular Dynamics  
Predrag Ranitovic, C. W. Hogle, Paula Rivière, Alicia Palacios, X. M. Tong, N. Toshima, Alberto González-Castrillo, L. Martin, Fernando Martín, M. M. Murnane, H. C. Hapteyn
- Mo P8      Single-molecule x-ray interferometry: a probe for coupled electron-nuclear quantum dynamics and molecular potentials  
Christophe Nicolas, Victor Kimberg, Faris Gel, Nobuhiro Kosugi, Andreas Lindblad, Paul Morin, Yu-Ping Sun, Johan Söderström, Oksana Travnikova, Catalin Miron
- Mo P9      Ultrafast dissociation in polyhalogenated ethane: alternative mechanisms  
Oksana Travnikova, Christophe Nicolas, Victor Kimberg, Roberto Flammini,

Xiao-Jing Liu, Minna Patanen, Svante Svensson, Catalin Miron

Mo P10 Autoionization of molecular hydrogen: where do the Fano lineshapes go?

Alicia Palacios, Johannes Feist, Alberto González-Castrillo, Jose Luis, Fernando Mart ín

## 1.2 Strong Field

Mo P11 Effects of autoionizing states on two-photon double ionization of the H<sub>2</sub> molecule

Xiaoxu Guan

Mo P12 Photoionization of H<sub>2</sub><sup>+</sup> by intense elliptically polarized radiation

Xiaoxu Guan

Mo P13 Correlated electron and nuclear dynamics in strong field photoionization of H<sub>2</sub><sup>+</sup>

Fernando Mart ín, R. E. F. Silva, Paula Rivi ère, Fabrice Catoire, Henri Bachau

Mo P14 Electron-Ion Differential Cross Section extracting from the High-order Above-Threshold Ionization spectroscopy of C<sub>2</sub>H<sub>4</sub> and C<sub>2</sub>H<sub>6</sub>

Chuncheng Wang, Misaki Okunishi, Robert Lucchese, Dajun Ding, Toru Morishita, Kiyoshi Ueda

Mo P15 Low Energy Spectra of H<sub>2</sub><sup>+</sup> in Strong IR Fields

Shu-Na Song

Mo P16 The enhancement of high harmonic generation from CO<sub>2</sub> molecule by the extension of Lewenstein model

Jing Guo

Mo P17 Two and three-photon double ionization of lithium

Michael Schuricke, Christian Dornes, Gregory Armstrong, James Colgan, Anatoli Kheifets, Joachim Ullrich, Alexander Dorn

Mo P18 Photoelectron momentum spectra of hydrogen atoms driven by elliptically polarized laser fields

Mitsuko Murakami

Mo P19 Study on Low-Energy Structure in Above-Threshold Ionization: an S-matrix approach

Jing Chen, Jingyun Fan, Wilhelm Becker

Mo P20 Angular distribution effects in multi-photon ionization

Gregor Hartmann, Markus Braune, Toralf Lischke, André Meissner, André Knie,  
Arno Ehresmann, Markus Ilchen, Burkhard Langer, Omar Al-Dossary, Uwe Becker

### 1.3 Field Assisted Collisions

Mo P21 Theoretical study on laser-assisted electron momentum spectroscopy of helium

Andrey Bulychev, Konstantin Kouzakov, Yuri Popov

Mo P22 Interferences in laser assisted photoionization of diatomic molecules

Diego Boll, Omar Fojon

Mo P23 Laser assisted electron impact excitation of helium in the threshold region

Alexander Dorn

Mo P24 Spatiotemporal ionization dynamics traced by laser-assisted scanning spectroscopy

Jamal Berakdar, Michael Schüler, Yaroslav Pavlyukh

## 2. Lepton Impact

### 2.1 Electron-Atom Collisions

Mo P37 Strong asymmetry of the angular distribution of Auger electrons from electron-impact excited autoionizing states of Rb

Alicija Kupliauskiene, Gintaras Kerevicius

Mo P38 On spectroscopic classification of autoionizing levels in Rb atoms

Alicija Kupliauskiene, Aleksandr Borovik, Gintaras Kerevicius, Viktorija Roman

Mo P39 Excitation-autoionization cross section of alkali atoms by electron impact

Alicija Kupliauskiene, Aleksandr Borovik

Mo P40 Excitation functions of high-lying autoionizing states in Rb atoms

Oleksandr Borovik, Alicija Kupliauskiene, Viktorija Roman

Mo P41 The  $4p^6$  electron energy-loss spectrum of Rb atoms

Oleksandr Borovik, Alicija Kupliauskiene, Viktorija Roman, Vasiliy Hrytsko

- Mo P42 The failure of the plane-wave impulse approximation  
Ferhat Menas, Claude Dal Cappello
- Mo P43 Universal functional formula of atomic elastic cross sections. The case of the hydrogen target.  
Karoly Tokesi, P. Salamon, D. Tskhakaya, D. Coster
- Mo P44 Ejected electron spectroscopy of autoionizing states of neon by electron impact  
Aleksandar Milosavljevic, Jozo Jureta, Bratislav Marinkovic
- Mo P45 An (e, 3e) study on the role of higher order mechanisms in electron impact double ionization of helium  
XueGuang Ren, Joachim Ullrich, Alexander Dorn
- Mo P46 Experimental and theoretical investigation of (e,2e) ionization of Ar(3p) in asymmetric kinematics at intermediate energies  
Mevlut Dogan, Melike Ulu , Zehra Nur Ozer , Murat Yavuz , Oleg Zatsarinny, Klaus Bartscha, Albert Crowe
- Mo P47 Accuracy of 3DW approach for electron impact ionization of Neon  
Don Madison, Sadek Amami, Hari Saha, Thomas Pfluege, Xueguang Ren, Arne Senfleben, Alexander Dorn
- Mo P48 Angular distributions for electron-impact ionization of Mg  
Gregory Armstrong, James Colgan, Kate Nixon, Andrew Murray
- Mo P49 Importance of the recoil contribution in Two Step 2 mechanism for the electron impact double ionization process  
Li Chengjun, Elena-Magdalena Staicu-Casagrande, Azzedine Lahmam-Bennani

## 2.2 Electron-Molecule/Cluster Collisions

- Mo P50 Stereodynamics of the low-energy electron dissociative attachment to tetrafluoromethane  
Shan-Xi Tian, Lei Xia, Hong-Kai Li, Xian-Jin Zeng, Xu-Dong Wang, Chuan-Jin Xuan, Bin Wu
- Mo P51 A program of calculating electron-momentum spectroscopy based on Fast Fourier Transform  
Hongjiang Yang, Xiangjun Chen
- Mo P52 Molecular Frame (e,2e) cross sections for electron impact ionization

with excitation of aligned H<sub>2</sub>

Don Madison

- Mo P53 New experiment for coincidence detection of H(2l)+H(2l') coming from dissociation of H<sub>2</sub> induced by electron impact.  
Rodrigo Nascimento, Aline Medina, Carlos Renato, Carla Carvalho, Leonardo Santos, Ginette Jalbert, Fabio Zappa, Nelson Velho, Jacques Robert
- Mo P54 Coplanar and non-coplanar differential cross sections for ionization of aligned H<sub>2</sub> molecules by electron impact  
Roberto Rivarola, Omar Fojón, Carlos Stia
- Mo P55 Convergent-close-coupling formalism for electron and positron scattering from molecules  
Mark Zammit, Dmitry Fursa, Jeremy Savage, Igor Bray
- Mo P56 Double excitation cross sections of molecular hydrogen induced by electron impact.  
Leonardo Santos, Rodrigo Nascimento, Nelson Velho, Ginette Jalbert
- Mo P57 Dissociation process of methane impact by electron  
Xincheng Wang, Baoren Wei, Zhuo Chen, Yaming Zou
- Mo P58 Electron scattering from molecular hydrogen in a spheroidal convergent close-coupling formalism  
Jeremy Savage, Dmitry Fursa, Mark Zammit, Igor Bray
- Mo P59 Elastic scattering of low-energy electrons by hydrogen molecules  
Jun-Yi Zhang, Ying Qian, Zong-Chao Yan, Udo Schwingenschlogl
- Mo P60 Theoretical Study of electron impact total cross sections for radicals over a wide energy range - CF<sub>2</sub> and SiF<sub>2</sub>  
Mayuri Barot, Minaxi Vinodkumar, Bobby Antony
- Mo P61 Comparison of Dyson, Hartree-Fock, Kohn-Sham, natural, natural-bond orbitals: electron momentum spectroscopy of CH<sub>4</sub>  
Chuangang Ning, Yurun Miao, Jingkang Deng, Jingsheng Zhu
- Mo P62 Intramolecular diffraction in (e, 2e) reactions of CX<sub>4</sub> (X=F, Cl, Br)  
Chuangang Ning, Jingsheng Zhu, Jingkang Deng, Yurun Miao
- Mo P63 Double Differential Cross Sections for Methane Molecules at Intermediate Energies  
Mevlut Dogan, Murat Yavuz, Nimet Okumus, Zehra Nur, Melike Ulu, Mohammed Sahlaoui, Houda Benmansour, Mammam Bouamoud

- Mo P64 Modified effective range theory for electron scattering on molecular hydrogen and methane  
Kamil Fedus, Zbigniew Idziaszek, Grzegorz Karwasz
- Mo P65 An (e, 2e + ion) investigation of fragmentation of methane induced by low energy electrons  
Shenyue Xu, Xinwen Ma, Xueguang Ren, Arne Senftleben, Thomas Pflüger, Joachim Ullrich, Shuncheng Yan, Pengju Zhang, Jie Yang, Alexander Dorn
- Mo P66 Electron-impact ionization for P-like ions forming Si-like ions  
Duck-Hee Kwon
- Mo P67 Resonances in the low-energy electron collisions with gas-phase thymine molecule  
Pavlo Markush

### 3. Heavy Ion Impact

#### 3.1 Ion-Atom Collisions

- Mo P81 2D momentum distribution of electron in transfer ionization of helium atom by fast proton  
Markus Schoeffler, O. Chuluunbaatar, Yuri Popov, S. Houamer, Jasmin Titze, Till Jahnke, Lothar Schmidt, Ottmar Jagutzki, A. Galstyan, A. A. Gusev
- Mo P82 Transfer excitation reactions in fast proton-helium collisions  
Markus Schoeffler, O. Chuluunbaatar, Yuri Popov, S. Houamer, Jasmin Titze, Till Jahnke, Lothar Schmidt, Ottmar Jagutzki, A. Galstyan, A. A. Gusev
- Mo P83 High resolution study of left-right scattering asymmetry in low-energy  $\text{Na}^+ \text{Rb}(5p_{\pm 1})$  charge-exchange collisions  
Bernard Pons, Arnaud Leredde, Xavier Flechard, Amine Cassimi, Dominique Hennecart
- Mo P84 Mean-field description of  $\text{B}^{2+}$ -Ne collisions with active target and projectile electrons  
Tom Kirchner, Gerald Schenk, Marko Horbatsch
- Mo P85 X-ray emission from highly-charged ions after electron transfer in slow collisions: the role of multiple capture processes  
Tom Kirchner, Arash Salehzadeh, Martino Trassinelli, Christophe Prigent, Emily Lamour, Jean-Pierre Rozet, S. Steydli, Dominique Vernhet



- Mo P86 Charge transfer processes in  $\text{He}^{2+}+\text{H}$  collisions in the presence of laser field  
Chunlei Liu, S. Y. Zou, B. He, J. G. Wang
- Mo P87 Effects of Projectile coherence in ion-atom collisions  
Xincheng Wang, Kathrina Schneider, Daniel Fischer, Michael Schulz, Aaron Larforge
- Mo P88 State-selective electron capture in collisions of  $\text{C}^{6+}$ ,  $\text{N}^{7+}$  with Hydrogen at intermediate energies.  
Luis Mendez, Alba Jorge, Luis Errea, Maria Silvia Gravielle, Clara Illescas, Jorge Miraglia
- Mo P89 Multielectronic close-coupling treatment of atomic and molecular collisions: applications to  $\text{H}^+$ -Li collisions in the keV energy range  
Alain Dubois, Gabriel Labaigt
- Mo P90 Charge transfer induced X-ray spectra in collisions of highly charged ions with H, He and  $\text{H}_2$   
Liu Ling
- Mo P91 Single-electron-capture cross-section scaling for low-q heavy ions at low energy  
Makoto Imai, Iriki Yoshitaka, Yushi Ohta, Takuya Majima, Hidetsugu Tsuchida, Hiromi Shibata, Akio Itoh
- Mo P92 Projectile coherence effects investigated for the ionization of helium  
Ladislau Nagy, Ferenc J ́arai-Szab ́o
- Mo P93 Dependence of excitation cross section in the collision bare ions by atomic hydrogen atom on the charge of projectile  
Mohammad Bolorizadeh, Reza Fathi, Farideh Shojaei Akbarabadi
- Mo P94 Dynamic electron screening in ionization of multi-shell atoms by bare ion impact  
Roberto Rivarola, Juan Manuel Monti, Omar Ariel Foj ́on, Jocelyn Hanssen
- Mo P95 Charge Exchange in the Collisions of Protons with Lithium Atoms  
Mohamed Assad Abdel-Raouf, Sabbah El-Kilany
- Mo P96 The target effect in proton impact helium and neon transfer ionization collision at intermediate energies  
Wentian Feng, Xinwen Ma, Xiaolong Zhu, Shaofeng Zhang, Ruitian Zhang, Dalong Guo, Bin Li, Shuncheng Yan, Shenyue Xu, Pengju Zhang
- Mo P97 Dynamics of transfer ionization process in p-He collisions at

intermediate energies

Dalong Guo

Mo P98 Simultaneous projectile and target ionization in neutral hydrogen on helium collisions

Xiaolong Zhu, Xinwen Ma, Shaofeng Zhang, Alexander Voitkiv, Wentian Feng, Ruitian Zhang, Shuncheng Yan, Enliang Wang, Pengju Zhang, Yong Gao, Bin Li, Shenyue Xu, Weiqiang Wen, Dongbin Qian, Dongmei Zhao, Dalong Guo, Shulong Wang, Ying Zhang, Huiping Liu, Dacheng Zhang, Jie Yang

Mo P99 Electron emission from dressed ions in collision with atoms and molecules at intermediate energies

Roberto Rivarola, Daniel Fregenal, Sergio Su árez, Juan Manuel, Guillermo Bernardi, Reinhold Schuch, Juan Fiol, Pablo Fainstein

Mo P100 Cross-sections of single & double electron capture in the interaction of highly charged ions with N<sub>2</sub> gas

Haibo Peng, Yongtao Zhao

Mo P101 Target Scaling for Ionization of Atoms and Molecules by Neutral to Fully Stripped Ions

Robert DuBois, Eduardo Montenegro, Geraldo Sigaud

### 3.3 Ion-Molecule/clusters or Atom-Molecule/clusters Collisions

Mo P102 Transfer ionization of D<sup>+</sup> and He<sup>+</sup> projectiles with H<sub>2</sub>-molecules – electron emission dependency on the internuclear axis

Markus Schoeffler

Mo P103 Calculation of ionization of H<sub>2</sub>O by H<sup>+</sup> with classical and semiclassical methods

Luis Errea, Clara Illescas, Luis Mendez, Ismanuel Rabadan

Mo P104 Basis generator method study of electron removal from water molecules by multiply-charged ion impact

Tom Kirchner, Tibor Pausz, Hans Juergen, Mitsuko Murakami, Marko Horbatsch

Mo P131 Ab initio treatment of charge transfer in proton-CH collision

Qixiang Sun, and Bing Yan

## 5. Collision Involving Condensed Matter

- Mo P25 Influence of the surface band structure in photoelectron emission by ultra-short laser pulses  
Carlos A. Rios Rubiano, Maria Silvia Gravielle, Dario M. Mitnik, V. M. Silkin
- Mo P26 One-step or two-step core-resonant double photoemission from a Ag(100) surface  
Zheng Wei, Frank O. Schumann, Changhui Li, Lucie Behnke, Gianluca Di, Giovanni Stefani, Juergen Kirschner
- Mo P27 Propagation of visible light through tapered glass capillaries for microbeams  
Kyohei Katoh, Wei-Guo Jin, Tatsuya Minowa, Tokihiro Ikeda
- Mo P68 Relativistic distorted wave Born approximation (rDWBA) model for ionization of Zn (001) surfaces  
Munendra Jain
- Mo P69 Influence of surface topography on elastically backscattered electrons  
Bo Da, Xing Ding, J.B. Gong, S.F. Mao, Z.J. Ding
- Mo P70 Optical properties of nickel derived from reflection electron energy loss spectra  
Reka Judit Bereczky, J. Toth, B. Da, S.F. Mao, Z.J. Ding, K. Tőkési
- Mo P71 Interplay between elastic scattering and positron reemission from W(100) at low positrons energies  
Jim Williams, Sudarshan Kathi, Peter Wilkie, Sergey Samarin, Paul Guagliardo, Vladimir Petrov, Alex Weiss
- Mo P72 Guiding of Electrons through a Paired Parallel Glass Plates  
Junliang Liu, Deyang Yu, Yingli Xue, Xiaohong Cai
- Mo P73 Characterization of 200 eV electrons transmission through a single glass microcapillary at large tilt angles  
Reka Judit Bereczky, A.R. Milosavljevic, M. Kovacevic, K. Tőkési, B.P. Marinkovic
- Mo P74 Broadening in the energy distribution of electron beams transmitted through a micrometer-sized tapered glass capillary  
Samanthi Wickramarachchi, T. Ikeda, D. Keerthisinghe, B. S. Dassanayake, J. A. Tanis
- Mo P75 Transmission of energetic electrons through insulating PET nanocapillaries

Darshika Keerthisinghe, B. S. Dassanayake, S. J. Wickramarachchi, A. Ayyad, N. Stolterfoht, J. A. Tanis

- Mo P76 Induced potential due to plasmon excitation for incoming and outgoing trajectories of external charged particles  
Juana Gervasoni, Raul Barrachina, Silvina Segui, Wolfgang Werner
- Mo P77 Channeling radiation from polarized electron  
Konstantin Korotchenko, Yuri Kunashenko
- Mo P78 Quantum Effects for Parametric X-Radiation from Channeled Electrons  
Yury Pivovarov, Konstantin Korotchenko
- Mo P105 Interference effects in the plasmon fields excited by a diatomic molecule  
Juana Gervasoni, Silvina Segui, Nestor Arista
- Mo P106 Alignment in magnetic sub-level populations of excited atomic hydrogen formed by single-electron capture from metal surfaces  
Daiji Kato
- Mo P107 Diffraction of H and H<sub>2</sub> from LiF(100) under fast grazing incidence conditions: A theoretical analysis  
Fernando Martin, Alberto S. Muzas, Cristina Diaz
- Mo P108 Interaction of low energy carbon ions with tungsten surface  
Karoly Tokesi, G. Langer, G. Erdőyi, A. Csik, D. Tskhakaya, D Coster
- Mo P109 Dynamic features of slow highly charge ion beam guided with a glass surface  
Tokihiko Ikeda, Takao M. Kojima
- Mo P110 Diffraction of fast helium atoms from a silver surface: surface potential probe  
Carlos Alberto Rios Rubiano, Gisela Anahi, Maria Silvia Gravielle, Nenad Bundaleski, Hocine Khemliche, Philippe Roncin
- Mo P111 Nano-structuring of CaF<sub>2</sub> surfaces by slow highly charged ions: simulation and experiment  
Georg Wachter, Károly Tókési, Gerhard Betz, Christoph Lemell, Joachim Burgdörfer, Ayman Sherif, Richard Arthur, René Heller, Stefan Facsko, Robert Ritter, Fritz Aumayr
- Mo P112 Energy loss of keV ions in grazing scattering on gold surfaces

Lin Chen, Vladimir Esaulov

Mo P113 Proton microbeam transmission between flat plates

Reka Judit Bereczky, I. Rajta, K. Tökési

Mo P114 Can the ions be guided with MeV/amu energies? The case of the 1 MeV proton microbeam.

Reka Judit Bereczky, K. Tökési, I. Rajta, G. U. L. Nagy

Mo P115 Longitudinal Coherence in Fast Atom Diffraction at Surfaces

Helmut Winter, Marco Busch, Erik Meyer, Jan Seifert

Mo P116 Simulation and analytic description of ion guiding through insulating capillaries

Nikolaus Stolterfoht

Mo P117 Simulation of MeV ion transmission through glass micro-capillaries

Amine CASSIMI, M. J. Simon, C. L. Zhou, M. Döbeli, T. Ikeda, A. M. Müller, A. Benyagoub, C. Grygiel, S. Guillous, H. Lebius, A. Mery, I. Monnet, F. Ropars, H. Shiromaru

Mo P118 Transmission of 16 MeV  $O^{5+}$  ions through straight and tapered glass capillaries

Asma Ayyad

Mo P119 Density effects on the blocking of ions guided through insulating PET capillaries

Nikolaus Stolterfoht

Mo P120 Guiding of  $Ar^{7+}$  ions through a glass microcapillary array

Peter Herczku

Mo P121 The effect of temperature on ion guiding through tapered glass capillaries

Friedrich Aumayr, Elisabeth Gruber, Peter Allinger, Stefan Wampl, Peter Hischenhuber, Yuyu Wang, Marius J. Simon

Mo P122 900 keV  $O^{6+}$  guiding through a single macro-capillary: dependence on the incident current

Yehong Wu

Mo P123 Dynamic transmission of intermediate energy proton in PC nanocapillary

Shao Jianxiong, Wang Guangyi

Mo P124 Geant4 simulation of transmission of ions through insulating

nanocapillaries

Hongqiang Zhang

Mo P125 Partial-guiding effects of medium energy  $O^{6+}$  ions through a tapered glass macrocapillary

Yingli Xue, Jing Che, Junliang Liu, Yehong Wu, Fangfang Ruan, Wei Wang, Deyang Yu, Xiaohong Cai

Mo P126 Transmission of 200 keV  $H^{2+}$  Ions through Tapered Capillaries in PC

Liu Shidong, Zhao Yongtao

Mo P127 Transmission of slow highly charged ions through rectangular nanocapillaries

Nadeem Akram, Hongqiang Zhang, Inna Leonidovna Soroka, Christina Trautmann, Reinhold Schuch

Mo P128 Energy dependence of  $H^{2+}$  ions guided through tapered capillaries in PC

Yuyu Wang, Shidong Liu, Yongtao Zhao, Jianlian Duan, Xianming Zhou, Jieru Ren, Rui Cheng, Xing Wang, Yang Yu, Yu Lei, Yuanbo Sun, Yongfeng Li, Haibo Peng, Guoqing Xiao

Mo P129 Focusing 2.6 MeV  $Kr^{13+}$  ions by glass micropipette

Guanghua Du, Zheng Wang, Jinlong Guo, Yingli Xue, Ruqun Wu

## 7. Related Topics

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Sabyasachi Kar, Hua-Wei Li

Mo P29 The ATSP2K and GRASP2K Multiconfiguration Atomic Structure Program Packages

Per Jönsson, Gaigalas Gediminas, Michel Godefroid, Jacek Bieron, Charlotte Froese

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Jon Grumer, Jiguang Li, Jörgen Ekman, Stefan Gustafsson, Simon Verdebout, Michel Godefroid, Per Jönsson

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Dong Yin, Yongbo Tang, Haoxue Qiao, Tingyun Shi

- Mo P32 The Partitioned Correlation Function Interaction Approach applied to B I, C II and more complex systems  
Simon Verdebout, Pavel Rynkun, Per Jönsson, Gediminas Gaigalas, Charlotte Froese, Michel Godefroid
- Mo P33 The Eu  $6p_{1/2}$  nd autoionizing Rydberg states  
JinHong Yang, ChangJian Dai
- Mo P34 Study on lifetime of Rydberg states of Eu atom  
hua Jing, ChangJian Dai
- Mo P35 Auger decay spectra calculations for some small molecules  
Osamu Takahashi, Saya Takaki, Naotake Kunitake, Katsuyoshi Yamasaki
- Mo P36 Rydberg atoms in a black-body radiation field: Relativistic calculation of radiation transition and ionization characteristics  
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- Mo P79 A unified description of two dissimilar effects: Zero-energy resonant and transparent collisions  
Raul Barrachina, Pablo Macri
- Mo P80 The alpha-dependence of transition frequencies  
Jacek Bieron, Andrius Alkauskas , Gediminas Gaigalas
- Mo P130 Current achievements at our cell micro-irradiation setup using tapered glass capillaries  
Volkhard Maeckel

# 1. Photon Impact

## 1.1 Weak Field

- Tu P1 X-ray ionization and dissociation of OCS into various fragmentation channels  
Benji Wales
- Tu P2 Photofragmentation of halogenated pyrimidine molecules in the VUV range  
Mattea Carmen Castrovilli, Paola Bolognesi, Daniele Catone, Patrick O'Keeffe, Annarita Casavola, avaldi Lorenzo
- Tu P3 Double photoionization of thiophene  
Ralf Wehlitz, Tim Hartman, Emily Makoutz, Narayan Appathurai
- Tu P4 Single and multiple photoionization of  $W^{q+}$  tungsten ions in charge states  $q=1,2,\dots,5$ : experiment and theory  
Alfred Mueller, Stefan Schippers, Jonas Hellhund, David Kilcoyne, Ronald Phaneuf, Connor Balance, Brendan McLaughlin

## 2.2 Strong Field

- Tu P5 Visualisation of ultra-fast isomerization reactions with FEL radiation at FLASH  
Y.H. Jiang, A. Senftleben, K. Schnorr, G. Schmid, M. Kurka, A. Rudenko, L. Foucar, M. Kübel, M.K. Kling, K. Ueda, R. Treusch, J. Ullrich, C.D. Schröter, R. Moshhammer
- Tu P6 X-ray lasing in diatomic molecules  
Victor Kimberg, Nina Rohringer
- Tu P7 Spatial interference during the ionization of noble gas atoms by few-cycle XUV laser pulses  
Sandor Borbely
- Tu P8 Atomic ionization by ultra-short laser pulses: Coulomb-Volkov method with distortion in the initial and final channels  
Jorge Miraglia, Maria Gravielle, Diego Arbo, Marcelo Ciappina
- Tu P9 Interference effects in photoelectrons emitted by XUV laser pulse on atoms enhanced by discrete state contributions  
Guillermo Bustamante, Vladimir Rodriguez, Raul Barrachina



- Tu P10 Resonant absorption effects on the charge state distribution  
Wenjun Xiang, Jiaolong Zeng
- Tu P11 Sequential multiphoton multiple ionization of Ar and Xe by X-ray free electron laser pulses at SACLA  
Hironobu Fukuzawa, Koji Motomura, Sang-Kil Son, Subhendu Mondal, Tetsuya Tachibana<sup>1</sup>, Yuta Ito, Miku Kimura, Kiyonobu Nagaya, Tsukasa Sakai, Kenji Matsunami, Shin-ichi Wada, Hironori Hayashita, Jumpei Kajikawa, XiaoJing Liu, Raimund Feifel, Per Johnsson, Marco Siano, Edwin Kukk, Benedikt Rudek, Benjamin Erk, Lutz Foucar, Emmanuel Robert, Catalin Miron, Kensuke Tono, Yuichi Inubushi, Takaki Hatsui, Makina Yabashi, Makoto Yao, Robin Santra, Kiyoshi Ueda
- Tu P12 Temporal resolution in pump–probe experiments enhanced by noisy pulses  
Kristina Meyer, Christian Ott, Philipp Raith, Andreas Kaldun, Juhai Jiang, Arne, Senftleben, Moritz Kurka, Robert Moshhammer, Joachim Ullrich, Thomas Pfeifer
- Tu P13 Two-electron wave-packet observation in Helium studied by XUV time-resolved multidimensional spectroscopy  
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- Tu P14 Electronic decay and fragmentation dynamics of iodomethane, multiply core-ionized by photoabsorption of intense XFEL pulses  
K Motomura, E Kukk, S Wada, K Nagaya, H Fukuzawa, S Mondal, T Tachibana, Y Ito, R Koga, T Sakai, K Matsunami, A Rydenko, C Nicolas, X-J Liu, C Miron, Y Zhang, J Chen, A Mailam, D Kim, K Tono, Y Inubushi, T Hatsui, M Yabashi, M Yao, K Ueda
- Tu P15 Resolving the enhanced nonlinear double excitation of helium in intense ultrashort extreme-ultraviolet pulses  
Toru Morishita
- Tu P16 Full fragmentation and enantiomeric selection of the isotopically chiral molecule CHCl<sub>2</sub>Br  
Martin Pitzer, Markus Schoeffler, Maksim Kunitski, Allen S. Johnson, Till Jahnke, Horst Schmidt-Boecking, Reinhard Doerner
- Tu P17 Quantum control of H<sub>2</sub><sup>+</sup> photodissociation using shaped intense pulses

Uri Lev, Leigh Graham, Vaibhav Prabhudesai, Adi Natan, Dirk Schwalm, oded heber, Itzik Ben-Itzhak, Christian Madsen, Brett Esry, Yaron Silberberg, Daniel Zajfmann

Tu P18 Interference of Two Shape Resonances Probed by Rescattering Photoelectron Spectroscopy of CO<sub>2</sub>

Misaki Okunishi, Robert R. Lucchese, Toru Morishita, Kiyoshi Ueda

Tu P19 Ionization processes for molecules in strong fields

Linda Hamonou, Toru Morishita, Oleg Tolstikhin, Hirohiko Kono, Shinichi Watanabe

Tu P20 Neutral Rydberg-state excitation of atoms and diatomic molecules in strong laser fields

Hang Lv, Junfeng Zhang, Wanlong Zuo, Mingxing Jin, Haifeng Xu, Dajun Ding

Tu P21 Investigation of the carrier envelope phase effect for molecular ionization

Shanshan Wei, Fuming Guo, Suyu Li, Yujun Yang

Tu P22 The effect carrier-envelope phase on the cut-off of molecular harmonic generation

Jun Wang, Fuming Guo, Suyu Li, Yujun Yang, Dajun Ding

Tu P23 Angular distribution of nitrogen molecular spectral lines from femtosecond laser filament in air

Shaohua Sun, Xiaoliang Liu, Bitao Hu

Tu P24 Influence of Higher-Order Kerr Effect on Femtosecond Laser Filamentation in Air at Different Pressures

Suyu Li, Fuming Guo, Yujun Yang, Mingxing Jin, Dajun Ding

Tu P25 Time-dependent electron interference prior to ionization in the hydrogen atom and the hydrogen molecular ion

Alejandro de la Calle, Daniel Dundas, Kenneth Taylor

Tu P26 Enhanced low-energy multiphoton above-threshold ionization in a strong laser field of mid-infrared wavelength

Vladimir Usachenko, Pavel Pyak

Tu P27 Mechanisms on the Photoelectron Angular Distributions of Atoms Ionized in Mid-Infrared Laser Fields

Xiao-Min Tong, Predrag Ranitovic, Nobuyuki Toshima

Tu P28 Evidence of decrease of potential energy in nonsequential double ionization above threshold for electron impact excitation

- Zhangjin Chen
- Tu P29 Photoionization yield of atomic hydrogen using intense few-cycle pulses  
O Ghafur, W.C. Wallace, J.E. Calvert, D.E. Laban, M.G. Pullen, A.N. Grum, K. Bartschat, I.V. Litvinyuk, R.T. Sang, D. Kielpinski
- Tu P30 Control of Photoelectron Dynamics in Strong Laser Fields  
Jiwei Geng
- Tu P31 Below-threshold high-order harmonic generation of Ar atoms in intense ultrashort laser fields: An all-electron time-dependent density-functional approach including macroscopic propagation effects  
Peng-Cheng Li, Shih-I Chu
- Tu P32 Time-resolved ionization of the hydrogen atom in strong laser fields  
Sen Cui, Feng He
- Tu P33 Detecting the elastic cross-section through the above threshold ionization spectra  
Yuanye Tian, Fuming Guo, Suyu Li, Yujun Yang
- Tu P34 Generation and coherent control of even-order harmonics by coupling intense frequency-comb laser with a cavity-mode  
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- Tu P37 Femtosecond double-pulse laser induced Cu plasma spectroscopy  
Anmin Chen, Yuanfei Jiang, Hang Liu, Mingxing Jin, Dajun Ding
- Tu P38 Focal Spot Analysis of Radially Polarized TW Laser Pulses for Radiation Pressure Acceleration  
Wenchao Sun, Meicheng Fu, Jie Huang, Hui Jia, Di Kong, Wenhua Hu, Ju Liu, Jiankun Yang, Xiujian Li, Shengli Chang, Junli Qi
- Tu P39 Visualization of the electron acceleration process in high-intensity laser-generated plasmas  
Malte Kaluza

## **2. Lepton Impact**

### **2.1 Electron-Atom Collisions**

- Tu P48 Electron impact ionization of atomic hydrogen using a model

## Hamiltonian via a projection operator

Anup Das

Tu P49 Electron Impact total cross sections for Beryllium on electron impact from threshold to 5 keV

Ashok Chaudhari

Tu P50 Electron-atom collisions of few-particles: Application of the Faddeev-Yakubovsky formalism

Mantile Lekala

Tu P51 Ionization cross sections of M-subshells of Pb atoms by electron impact

Nikolay Borovoy, Ryslan Ischenko

Tu P52 Electron-impact ionization of Cd atoms from ground and metastable states

Roman Fedorko, Tatjana Snegurskaya, Mikola Margitych, Yuriy Svida, Ivan

Shafranyosh

Tu P53 Triplet and Singlet transition of K-shell electrons in the Relativistic (e, 3e) processes on atoms

Rakesh Choubisa

## 2.2 Electron-Molecule/Cluster Collisions

Tu P54 Low-energy electron scattering from  $\alpha$ -tetrahydrofurfuryl alcohol

Darryl Jones, Luca Chiari, Penny Thorn, Michael Brunger, Gustavo Garcia, Francisco Blanco

Tu P55 Dynamical (e,2e) investigations of structurally related cyclic ethers

Darryl Jones, Joseph Builth-Williams, Luca Chiari, Penny Thorn, Susan Bellm, Hari Chaluvadi, Don Madison, ChuanGang Ning, Birgit Lohmann, Oddur Ingólfsson, Michael Brunger

Tu P56 M3DW Calculations for Electron-Impact Ionization of CH<sub>4</sub>

Don Madison, Adam Upshaw, Chuangang Ning

Tu P57 The ionization and dissociation of nitrous oxide studied by fast electron impact

Y.W. Liu, M. Lin, L.F. Zhu

Tu P58 The electronic structure of TEMPO, its cation and anion

- Tu P59 Khrystyna Regeta, Radmila Janeckova, Dusan Kubala, Juraj Fedor, Michael Allan  
Low energy electron-induced break-up of the tetrahydrofuran molecule: An (e, 2e+ion) study  
XueGuang Ren, Thomas Pflueger, Marvin Weyland, Woon Yoon, Hans Rabus, Joachim Ullrich, Alexander Dorn
- Tu P60 Electron momentum spectroscopy study on valence electronic structure of Cyclopropylamine  
Yufeng Shi, Enliang Wang, Hongjiang Yang, Wei Zhang, Xu Shan, Xiangjun Chen
- Tu P61 Dissociative electron attachment to tetrahydrofuran: Rich fragmentation patterns and partial absolute cross sections  
Radmila Janečková, Olivier May, Aleksandar Milosavljević, Juraj Fedor
- Tu P62 Dissociative electron attachment to methylacetylene and dimethylacetylene: Symmetry versus proximity  
Radmila Janečková, Olivier May, Juraj Fedor
- Tu P63 Dissociative Excitation of Pyrimidine in the VUV  
John William McConkey, Jeff Hein
- Tu P64 Electron impact total ionization cross section for simple bio-molecules  
Dhanoj Gupta, Bobby Antony
- Tu P65 Direct observation of the major components of mouse bones and related compounds by electron Rutherford backscattering spectroscopy  
Karoly Tokesi, M. Vos, I. Benko
- Tu P66 Electron impact total ionization cross sections on DNA and RNA components  
Minaxivinod Vinodkumar, Chetan Limbachiya, Mayuri Barot, Mohit Swadia, Avani Barot
- Tu P67 Towards electron-impact dissociation dynamics of biologically relevant molecules in a reaction microscope  
Thomas Pflüger, Xueguang Ren, Marvin Weyland, Alexander Arndt, Woonyong Baek, Hans Rabus, Alexander Dorn
- Tu P68 Absolute Electron Ionization Cross section for Uracil  
Mohammad Rehman, E. Krishnakumar
- Tu P69 Absolute Electron Ionization Cross section for Pyrimidine

- Mohammad Rehman, E. Krishnakumar
- Tu P70 The role of side chains in electron transfer induced fragmentation of aminoacids  
Filipe Ferreira da Silva, Joao Rafael, Andre Rebelo, Diogo Almeida, Paulo Limao-Vieira
- Tu P71 Electron scattering from pyrimidine  
Martina Fuss, Rafael Colmenares, Antonio Muñoz, Francisco Blanco, Diogo Almeida, Paulo Limao-Vieira, Gustavo García
- Tu P72 Low-energy electron-induced “oxygen fixation” to DNA SAMs  
Yi Zheng, Andrew Bass, Leon Sanche, Nasrin Mirsaleh-Kohan, Sylvain Massey
- Tu P73 Absolute measurement of low energy electron-induced strand-break damage in films of plasmid DNA and plasmid DNA/Dap<sup>2+</sup> complexes  
Yi Zheng, Omar Boulanouar, Mohammad Rezaee, Michel Fromm, Pierre Cloutier, Andrew Bass, Marc Michaud, Darel Hunting, Leon Sanche
- Tu P74 Mass spectrometric studies of nucleobase/water clusters  
Julia Aysina, Michael Neustetter, Samuel Zöttl, Paul Scheier, Stephan Denifl
- Tu P75 Positive and negative ion formation in the selenium vapor by electron impact  
Pavlo Markush
- Tu P76 Electron Impact Excitation of the Gas-Phase Pyrimidine Molecule  
Vitalij Zvenigorodsky
- Tu P77 Electron impact dissociative excitation and dissociative ionization of gas-phase nucleic acid base molecules  
Maria Sukhoviya
- Tu P131 Electron impact total ionization cross sections on DNA and RNA components a theoretical study  
Minaxi Vinodkumar, Mayuri Barot, Chetan Limbachiya And Harshad Bhutadia

## 2.3 Electron-Ion Collisions

- Tu P78 Theoretical study of W<sup>25+</sup> spectra  
Gediminas Gaigalas
- Tu P79 The collision strengths calculations of Ni XXIII

- Quanping Fan, Gang Jiang  
 Tu P80 Radiation Emission of Fast Electrons in Collisions with “Ion-Sphere”  
 in Dense Plasmas  
 Xiangdong Li
- Tu P81 Effects of doubly excited states on the ionization balance for high-Z  
 plasmas  
 Zeqing Wu, Bin Duan, Jun Yan
- Tu P82 Effects of an ambient radiation field on charge state distribution of  
 NLTE carbon plasmas  
 Cheng Gao, Jiaolong Zeng
- Tu P83 On the behavior of the  $_{nl}(K, T)_{n2}^A$  series of doubly excited states in  
 He-like atoms immersed in weakly coupled plasmas  
 José Luis Sanz-Vicario, Juan Carlos, Andrés Felipe
- Tu P84 Generalized energy approach in electron-collisional spectroscopy of  
 multicharged ions in plasma in Debye approximation  
 Andrey Loboda

## 2.4 Collision Involving Exotic particles

- Tu P85 Unified treatment of annihilation and protonium formation in slow  
 collisions of antiprotons with hydrogen atoms  
 Kazuhiro Sakimoto
- Tu P86 Vortices in the Electron - Positron - Proton Continuum created by the  
 Positron - Impact Ionization of Hydrogen  
 Raul Barrachina, Francisco Navarrete, Juan Fiol, Renata Della Picca
- Tu P87 Neutrino-helium ionizing collisions: Electromagnetic contribution  
 Konstantin Kouzakov, Yulia Rodina, Alexander Studenikin
- Tu P88 Collisional effects in antiprotonic helium-3  
 Susanne Friedreich
- Tu P89 Magnetic-Field-free measurements of the total cross sections for  
 positron-argon scattering  
 Kazuaki Nagumo, Masamitsu Hoshino, Hiroshi Tanaka, Yasuyuki Nagashima
- Tu P90 Low-energy positron and electron scattering from tetrahydrofuran  
 and 3-hydroxy-tetrahydrofuran

James Sullivan, Luca Chiari, Emma Anderson, Wade Tattersall, Prasanga Paliawadana, Josh Machacek, Casten Makochekekanwa, Robert McEachran, Stephen Buckman, Michael Brunger, Gustavo Garcia, Francisco Blanco

### 3. Heavy Ion Impact

#### 3.2 Atom-atom/ion-ion Collisions

- Tu P93 Energy loss and charge states of a Calcium beam after interaction with a hydrogen plasma produced by a theta-discharge  
Ge Xu
- Tu P94 A Comparative study between complete breakup and target ionization of a Ps – H system  
Dipali Ghosh, Chandana Sinha

#### 3.3 Ion-Molecule/clusters or Atom-Molecule/clusters Collisions

- Tu P100 Highly charged ion impact on uracil: Cross sections measurements and scaling  
Aditya Narain Agnihotri, Lokesh C. Tribedi, S Kasthurirangan, C Champion, R. D. Rivarola
- Tu P101 Isotopical effects in electron and atom molecular scattering  
Serg Pozdneev

### 5. Collision Involving Condensed Matter

- Tu P35 The structure of  $[\text{Mn}^{\text{III}}_6 \text{Cr}^{\text{III}}]^{3+}$  single-molecule magnets deposited in submonolayers and monolayers on surfaces studied by means of molecular resolved atomic force microscopy (AFM) and Kelvin Probe Force Microscopy in UHV  
Ulrich Heinzmann, T. Volkmann, A. Brechling, V. Hoeke, T. Glaser
- Tu P36 The local magnetic properties of  $[\text{Mn}^{\text{III}}_6 \text{Cr}^{\text{III}}]^{3+}$  and  $[\text{Fe}^{\text{III}}_6 \text{Cr}^{\text{III}}]^{3+}$  single-molecule magnets deposited on surfaces studied by spin-polarized photoemission and XMCD with circularly polarized synchrotron radiation



- Ulrich Heinzmann, A. Helmstedt, N. Dohmeier, N. Mueller, A. Gryzia, A. Brechling, V. Hoeke, E. Krickemeyer, T. Glaser, M. Fonin, S. Bouvron, P. Leicht, T. Tietze, E. Goering, K. Kueppe
- Tu P40 Experimental observation of the vibrational wavefunction of  $^4\text{He}_2$ ,  $^4\text{He}_3$  and  $^4\text{He}_2$   $^3\text{He}$  using strong laser-fields  
Jörg Voigtsberger, Jasper Becht, Nadine Neumann, Felix Sturm, Maksim Kunitski, Anton Kalinin, Jian Wu, Stefan Zeller, Markus Schoeffler, Wieland Schöllkopf, Dario Bressanini, Achim Czasch, Lothar Ph, Robert Grisenti, Till Jahnke, Reinhard Dörner
- Tu P41 Specific Spectrum of Cherenkov Radiation from Relativistic Heavy Ions Caused by Slowing Down in Radiator  
Yury Pivovarov, Elena Fiks
- Tu P102 Nanostructure formation on muscovite mica surface induced by ions  
Hongqiang Zhang, Peng Zhou
- Tu P103 Visible light emission from  $\text{Kr}^{9+}$  ion-bombarded GaAs surface  
Qiumei xu, Zhihu Yang, Yehong Wu, Zhongyong Song, Yipan Guo
- Tu P104 Electron emission from tungsten surface induced by neon ions  
Zhongfeng Xu, Lixia Zeng, Yongtao Zhao
- Tu P105 Potential sputtering on  $\text{SiO}_2$  and Au induced by highly charged ions impact  
Rui Cheng, Tieshan Wang, Yongtao Zhao, Yuyu Wang, Haibo Peng, Guoqing Xiao
- Tu P106 Secondary Electron Emission from Carbon Foils under  $\text{O}^{2+}$  Ion Impact  
Yang Yu, Shidong Liu, Yongtao Zhao, Yuyu Wang
- Tu P107 Coherent bremsstrahlung from neutrons  
Yuri Kunashenko
- Tu P109 Two-Dimensional Thermal Simulations of Al and C ion Strippers for Experiments at SPIRAL2 Using the Highest Beam Intensities  
Naeem Tahir
- Tu P110 Implantation of Multiply Charged Sulfur Ions in Water Ice  
jingjie ding, Philippe Boduch, Alicja Domaracka, Thomas Langlinay, Xueyang Lv, Maria Elisabetta, Hermann Rothard, Gianni Strazzulla
- Tu P111 Density effect for equilibrium charge distribution of nitrogen ions  
Nikolay Novikov, Teplova Yana
- Tu P112 Evaluation of non-equilibrium parameters for light ions passing

through thin films

Yana Teplova, Belkova Yulia

Tu P113 Barkas effect in the stopping power for ions with different ionization degrees

Claudio Archubi

Tu P114 Modifications of the magnetic properties of MnAs thin films under impact of slow highly charged ions

Martino Trassinelli, Mahmoud Eddrief, Victor H. Etgens, Sarah Hidki, Vasilica Gafton, Emmanuelle Lacaze, Emily Lamour, Massimiliano Marangolo, Christophe Prigent, Jean-Pierre Rozet, Sébastien Steydli, Yunlin Jacques, Dominique Vernhet

Tu P115 Microscopic model of material excitation during relaxation of electron subsystem in swift heavy ion tracks

Pavel Terekhin, Sergey Gorbunov, Nitita Medvedev, Alexei Prosvetov, Ruslan Rymzhanov, Alexander Volkov

Tu P116 Resonant Coherent Excitation of Hydrogenlike Fe<sup>25+</sup> in a Ge crystal

Yuji Nakano

Tu P117 Cherenkov Radiation from Relativistic Channeled Particles

Elena Fiks, Yury Pivovarov, Oleg Bogdanov

Tu P118 Influence of Helium pre-irradiation on the mechanical property of He-irradiated material

Ji Wang, Ning Gao, Zhiguang Wang, Tielong Shen

Tu P119 The characteristic L x-ray energy shifts of thick and thin Au target by 84 MeV C<sup>4+</sup> ions bombardments

Zhangyong Song, Zhihu Yang, Xiaohong Cai, Guoqing Xiao

Tu P120 Hardening Of Ferritic/Martensitic Steel Induced By Self-ion Irradiation

Huiping Zhu

Tu P121 High-resolution x-ray spectra from highly charged Si, S and Cl ions showing evidence of fluorescence active resonant states

Siddharth Kasthurirangan, Lokesh C. Tribedi Tapan K. Mukherjee, J P Santos, J K Saha, A N Agnihotri, A Banerjee, D Misra, A Kumar, A M Costa, P Indelicato

Tu P122 The study of damage produced by H-ion and He-ion implantation in Lithium tantalate crystal

Lilong Pang, Zhiguang Wang, Cunfeng Yao, Jianrong Sun, Minghuan Cui, Kongfang

Wei, Tielong Shen, Yanbin Sheng, Yabin Zhua, Yuanfei Li, Hailong Chang, Ji Wang,  
Huiping Zhu

Tu P123 Study on the electron configuration and the average equilibrium charge-state of highly charged Kr<sup>13+</sup> ion

Cexiang Mei, Xiaoan Zhang, Yongtao Zhao, Jieru Ren, Xianming Zhou, Guoqing Xiao

Tu P124 Dependence of X-Ray emission cross section on energy loss straggling

Yuanbo Sun, Yongtao Zhao

Tu P125 Effects of multiple ionization on total L X-ray emission by proton impact

Xing Wang, Yongtao Zhao, Xianming Zhou, Rui Cheng, Yu Lei, Yuanbo Sun, Guoqing Xiao

Tu P126 Fluorescence emission from CsI(Tl) crystals induced by high-energy heavy ions

Yongtao Zhao, Yuanbo Sun, Yu Lei, Rui Cheng, Xianming Zhou, Yuyu Wang, Jieru Ren

Tu P127 Charge state effect on Si K X-ray emission induced by I<sup>q+</sup> ions impacting

Yu Lei, Yong Zhao

Tu P128 Study of the Inelastic Energy Loss of H<sup>+</sup> and H<sup>2+</sup> in Silicon in E<90 keV Energy Region

Tieshan Wang

Tu P129 K-Shell ionization cross sections of Ti, Cr, Ni, Cu and Zr in collisions with <sup>16</sup>O ions at MeV/u energies

Adela Consuela Scafes

Tu P130 Effects of swift heavy ion irradiation on structural and magnetic properties for metallic glasses

Jianrong Sun, Wang Zhiguang, Wang Yuyu

## 6. Experimental Techniques

Tu P42 Passively phase-stable monolithic all-reflective two-dimensional electronic spectroscopy based on a 4-quadrant mirror

- Yizhu Zhang, Kristina Meyer, Christian Ott, Thomas Pfeifer
- Tu P43 Cleavage enhancement of specific chemical bonds in DNA-Cisplatin complexes induced by X-rays  
Yi Zheng, Xiaobin Yao, Xinglan Luo, Xianzhi Fu
- Tu P44 Action near-edge X-ray spectroscopy of ubiquitin protein isolated in vacuo  
Aleksandar Milosavljevic, Christophe Nicolas, Francis Canon, Grazieli Simões, Catalin Miron, Alexandre Giuliani
- Tu P45 EPICEA: Probing High-Energy Electron Emission In The Molecular Frame  
Xiao-Jing Liu, Christophe Nicolas, Emmanuel Robert, Catalin Miron
- Tu P46 Atomic and molecular science at the Canadian Light Source  
Michael MacDonald, Lucia Zuin
- Tu P47 Hybrid spin-exchange optical pumping of high density  $^3\text{He}$  gas  
Rongchun Lu, Xing Zong, Haiyan Gao
- Tu P91 Toward the antihydrogen beam formation with the cusp trap scheme and a new antihydrogen detector  
Yugo Nagata
- Tu P92 Effects of alkali metal coating on the emission of positronium neutral atoms and positronium negative ions from tungsten surfaces  
Yasuyuki Nagashima, Koji Michishiov, Takayuki Tachibana, Hiroki Terabe, Shimpei Iida, Takashi Yamashita, Ken Wada, Izumi Mochizuki, Akira Yagishita, Toshio Hyodo
- Tu P108 An ion current intensities measurement device in visible light emission measurements of the interaction of slow, highly charged ion with solid surfaces  
Hongyun Zhao

## 7. Related Topics

- Tu P95 Stopping power for deuterons in partially ionized Al plasmas  
Bin He, Jianguo Wang
- Tu P96 Study of the slow ion beam penetrating low density plasma target  
Rui Cheng, Yongtao Zhao, Sergey Savin, Roman Gavrilin, Xianming Zhou, Yuyu

Wang, Yuanbo Sun, Haibo Peng, Jieru Ren, Guoqing Xiao

- Tu P97    **Electronic Collisions of Ions in Plasma:  
Energy Loss and Charge State Distribution**  
Dieter H.H. Hoffmann
- Tu P98    **Effect of radiation cascade on properties of edge dislocations and  
interstitial type dislocation loops in bcc Fe**  
Ning Gao, Zhiguang Wang
- Tu P99    **Modeling of an argon cascaded arc plasma by ANSYS FLUENT**  
Guodong Wei, Xin Qi, Lei Yang