List of communications: articles, conferences, etc.

of Martino Trassinelli

Chargé de recherche classe normale avec Habilitation

Institut des NanoSciences de Paris, UMR7588

CNRS, Section 04

September 2024

Contents

Publications

Articles in peer reviewed journals

Letters

[AL1] G. Leckenby, R. S. Sidhu, R. J. Chen, R. Mancino, B. Szányi, M. Bai, U. Battino, K. Blaum, C. Brandau, S. Cristallo, T. Dickel, I. Dillmann, D. Dmytriiev, T. Faestermann, O. Forstner, B. Franczak, H. Geissel, R. Gernhäuser, J. Glorius, C. Griffin, A. Gumberidze, E. Haettner, P.-M. Hillenbrand, A. Karakas, T. Kaur, W. Korten, C. Kozhuharov, N. Kuzminchuk, K. Langanke, S. Litvinov, Y. A. Litvinov, M. Lugaro, G. Martínez-Pinedo, E. Menz, B. Meyer, T. Morgenroth, T. Neff, C. Nociforo, N. Petridis, M. Pignatari, U. Popp, S. Purushothaman, R. Reifarth, S. Sanjari, C. Scheidenberger, U. Spillmann, M. Steck, T. Stöhlker, Y. K. Tanaka, M. Trassinelli, S. Trotsenko, L. Varga, D. Vescovi, M. Wang, H. Weick, A. Y. Lopóz, T. Yamaguchi, Y. Zhang, and J. Zhao, *High-temperature ^{205}Tl decay clarifies ^{205}Pb dating in early solar system*, accepted for publication in Nature.

[AL2] R. Loetzsch, H. F. Beyer, L. Duval, U. Spillmann, D. Banaś, P. Dergham, F. M. Kröger, J. Glorius, R. E. Grisenti, M. Guerra, A. Gumberidze, R. Heß, P. M. Hillenbrand, P. Indelicato, P. Jagodzinski, E. Lamour, B. Lorentz, S. Litvinov, Y. A. Litvinov, J. Machado, N. Paul, G. G. Paulus, N. Petridis, J. P. Santos, M. Scheidel, R. S. Sidhu, M. Steck, S. Steydli, K. Szary, S. Trotsenko, I. Uschmann, G. Weber, T. Stöhlker, and M. Trassinelli, *Testing quantum electrodynamics in extreme fields using helium-like uranium*, Nature **625** (2024), 673–678.

[AL3] F. C. Ozturk, B. Akkus, D. Atanasov, H. Beyer, F. Bosch, D. Boutin, C. Brandau, P. Bühler, R. B. Cakirli, R. J. Chen, W. D. Chen, X. C. Chen, I. Dillmann, C. Dimopoulou, W. Enders, H. G. Essel, T. Faestermann, O. Forstner, B. S. Gao, H. Geissel, R. Gernhäuser, R. E. Grisenti, A. Gumberidze, S. Hagmann, T. Heftrich, M. Heil, M. O. Herdrich, P. M. Hillenbrand, T. Izumikawa, P. Kienle, C. Klaushofer, C. Kleffner, C. Kozhuharov, R. K. Knöbel, O. Kovalenko, S. Kreim, T. Kühl, C. Lederer-Woods, M. Lestinsky, S. A. Litvinov, Y. A. Litvinov, Z. Liu, X. W. Ma, L. Maier, B. Mei, H. Miura, I. Mukha, A. Najafi, D. Nagae, T. Nishimura, C. Nociforo, F. Nolden, T. Ohtsubo, Y. Oktem, S. Omika, A. Ozawa, N. Petridis, J. Piotrowski, R. Reifarth, J. Rossbach, R. Sánchez, M. S. Sanjari, C. Scheidenberger, R. S. Sidhu, H. Simon, U. Spillmann, M. Steck, T. Stöhlker, B. H. Sun, L. A. Susam, F. Suzaki, T. Suzuki, S. Y. Torilov, C. Trageser, M. Trassinelli, S. Trotsenko, X. L. Tu, P. M. Walker, M. Wang, G. Weber, H. Weick, N. Winckler, D. F. A. Winters, P. J. Woods, T. Yamaguchi, X. D. Xu, X. L. Yan, J. C. Yang, Y. J. Yuan, Y. H. Zhang, and X. H. Zhou, *New test of modulated electron capture decay of hydrogen-like ^{142}Pm ions: Precision measurement of purely exponential decay*, Phys. Lett. B **797** (2019), 134800.

[AL4] M. Trassinelli, D. F. Anagnostopoulos, G. Borchert, A. Dax, J. P. Egger, D. Gotta, M. Hennebach, P. Indelicato, Y. W. Liu, B. Manil, N. Nelms, L. M. Simons, and A. Wells, *Measurement of the charged pion mass using x-ray spectroscopy of exotic atoms*, Phys. Lett. B **759** (2016), 583–588.

[AL5] M. Trassinelli, M. Marangolo, M. Eddrief, V. H. Etgens, V. Gafton, S. Hidki, E. Lacaze, E. Lamour, C. Prigent, J.-P. Rozet, S. Steydli, Y. Zheng, and D. Vernhet, *Suppression of the thermal hysteresis in magnetocaloric MnAs thin film by highly charged ion bombardment*, Appl. Phys. Lett. **104** (2014), 081906.

[AL6] P. Kienle, F. Bosch, P. Bühler, T. Faestermann, Y. A. Litvinov, N. Winckler, M. Sanjari, D. Shubina, D. Atanasov, H. Geissel, V. Ivanova, X. Yan, D. Boutin, C. Brandau, I. Dillmann, C. Dimopoulou, R. Hess, P.-M. Hillebrand, T. Izumikawa, R. Knöbel, J. Kurcewicz, N. Kuzminchuk, M. Lestinsky, S. Litvinov, X. Ma, L. Maier, M. Mazzocco, I. M. b, C. Nociforo, F. Nolden, C. Scheidenberger, U. Spillmann, M. Steck, T. Stöhlker, B. Sun, F. Suzaki, T. Suzuki, Y. Torilov, M. Trassinelli, X. Tu, M. Wang, H. Weick, D. Winters, N. Winters, P. Woods, T. Yamaguchir, G. Zhang, and T. Ohtsubov, *High-resolution measurement of the time-modulated orbital electron capture and of the decay of hydrogen-like $^{142}Pm^{60+}$ ions*, Phys. Lett. B **726** (2013), 638–645.

[AL7] A. Gumberidze, D. B. Thorn, C. J. Fontes, B. Najjari, H. L. Zhang, A. Surzhykov, A. Voitkiv, S. Fritzsche, D. Bans, H. Beyer, W. Chen, R. D. DuBois, S. Geyer, R. E. Grisenti, S. Hagmann, M. Hegewald, S. Hess, C. Kozhuharov, R. Märtin, I. Orban, N. Petridis, R. Reuschl, A. Simon, U. Spillmann, M. Trassinelli, S. Trotsenko, G. Weber, D. F. A. Winters, N. Winters, D. Yu, and T. Stöhlker, *Electron- and proton-impact excitation of hydrogenlike uranium in relativistic collisions*, Phys. Rev. Lett. **110** (2013), 213201.

[AL8] S. Trotsenko, A. Kumar, A. V. Volotka, D. Banas, H. F. Beyer, H. Bräuning, S. Fritzsche, A. Gumberidze, S. Hagmann, S. Hess, P. Jagodzinski, C. Kozhuharov, R. Reuschl, S. Salem, A. Simon, U. Spillmann, M. Trassinelli, L. C. Tribedi, G. Weber, D. Winters, and T. Stöhlker, *Spectral shape of the two-photon decay of the 2^1S_0 state in He-like tin*, Phys. Rev. Lett. **104** (2010), 033001.

[AL9] T. Strauch, F. D. Amaro, D. F. Anagnostopoulos, P. Bühler, D. S. Covita, H. Gorke, D. Gotta, A. Gruber, A. Hirtl, P. Indelicato, E. O. Le Bigot, M. Nekipelov, J. M. F. dos Santos, S. Schlesser, P. Schmid, L. M. Simons, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Precision determination of the $d\pi - nn$ transition strength at threshold*, Phys. Rev. Lett. **104** (2010), 142503.

[AL10] N. Winckler, H. Geissel, Y. A. Litvinov, K. Beckert, F. Bosch, D. Boutin, C. Brandau, L. Chen, C. Dimopoulou, H. G. Essel, B. Fabian, T. Faestermann, A. Fragner, E. Haettner, S. Hess, P. Kienle, R. Kn^bel, C. Kozhuharov, S. A. Litvinov, M. Mazzocco, F. Montes, G. M¸nzenberg, C. Nociforo, F. Nolden, Z. Patyk, W. R. Plafl, A. Prochazka, R. Reda, R. Reuschl, C. Scheidenberger, M. Steck, T. Stöhlker, S. Y. Torilov, M. Trassinelli, B. Sun, H. Weick, and M. Winkler, *Orbital electron capture decay of hydrogen- and helium-like ^{142}Pm ions*, Phys. Lett. B **679** (2009), 36–40.

[AL11] M. Trassinelli, A. Kumar, H. F. Beyer, P. Indelicato, R. Märtin, R. Reuschl, Y. S. Kozhedub, C. Brandau, H. Bräuning, S. Geyer, A. Gumberidze, S. Hess, P. Jagodzinski, C. Kozhuharov, D.

Liesen, U. Spillmann, S. Trotsenko, G. Weber, D. F. A. Winters, and T. Stöhlker, *Observation of the $2p_{3/2} \rightarrow 2s_{1/2}$ intra-shell transition in He-like uranium*, Eur. Phys. Lett. **87** (2009), 63001.

[AL12] D. S. Covita, D. F. Anagnostopoulos, H. Gorke, D. Gotta, A. Gruber, A. Hirtl, T. Ishiwatari, P. Indelicato, E. O. Le Bigot, M. Nekipelov, J. M. F. dos Santos, P. Schmid, L. M. Simons, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Line shape of the mu H(3p-1s) hyperfine transitions*, Phys. Rev. Lett. **102** (2009), 023401–4.

[AL13] Y. A. Litvinov, F. Bosch, N. Winckler, D. Boutin, H. G. Essel, T. Faestermann, H. Geissel, S. Hess, P. Kienle, R. Knöbel, C. Kozhuharov, J. Kurcewicz, L. Maier, K. Beckert, P. Beller, C. Brandau, L. Chen, C. Dimopoulou, B. Fabian, A. Fragner, E. Haettner, M. Hausmann, S. A. Litvinov, M. Mazzocco, F. Montes, A. Musumarra, C. Nociforo, F. Nolden, W. Plaß, A. Prochazka, R. Reda, R. Reuschl, C. Scheidenberger, M. Steck, T. Stöhlker, S. Torilov, M. Trassinelli, B. Sun, H. Weick, and M. Winkler, *Observation of non-exponential orbital electron capture decays of hydrogen-like ^{140}Pr and ^{142}Pm ions*, Phys. Lett. B **664** (2008), 162–168.

[AL14] Y. A. Litvinov, F. Bosch, H. Geissel, J. Kurcewicz, Z. Patyk, N. Winckler, L. Batist, K. Beckert, D. Boutin, C. Brandau, L. Chen, C. Dimopoulou, B. Fabian, T. Faestermann, A. Fragner, L. Grigorenko, E. Haettner, S. Hess, P. Kienle, R. Knobel, C. Kozhuharov, S. A. Litvinov, L. Maier, M. Mazzocco, F. Montes, G. Munzenberg, A. Musumarra, C. Nociforo, F. Nolden, M. Pfutzner, W. R. Plass, A. Prochazka, R. Reda, R. Reuschl, C. Scheidenberger, M. Steck, T. Stohlker, S. Torilov, M. Trassinelli, B. Sun, H. Weick, and M. Winkler, *Measurement of the β^+ and orbital electron-capture decay rates in fully ionized, hydrogenlike, and heliumlike ^{140}Pr ions*, Phys. Rev. Lett. **99** (2007), 262501–4.

Regular articles

[A1] L. Duval, E. Lamour, S. Macé, J. Machado, M. Maxton, N. Paul, C. Prigent, M. Trassinelli, and P. Indelicato, *High-precision, reference-free measurements of $2p \rightarrow 1s$ transitions in boron-like sulfur and argon* (submitted to Eur. Phys. J. D).

[A2] S. Cervera, M. LoBue, E. Fontana, M. Eddrief, V. H. Etgens, E. Lamour, S. Macé, M. Marangolo, E. Plouet, C. Prigent, S. Steydli, D. Vernhet, and M. Trassinelli, *Mastering disorder in a first-order transition by ion irradiation*, Phys. Rev. Materials **8** (2024), 024406.

[A3] M. Trassinelli, *Shape and satellite studies of highly charged ions x-ray spectra using bayesian methods*, Atoms **11** (2023), 64.

[A4] J. Machado, N. Paul, G. Soum-Sidikov, L. Duval, S. Macé, R. Loetzsch, M. Trassinelli, and P. Indelicato, *Absolute measurement of the relativistic magnetic dipole transition in he-like sulfur*, Phys. Rev. A **107** (2023), 032821.

[A5] L. Maillard, F. Finocchi, and M. Trassinelli, *Assessing search and unsupervised clustering algorithms in nested sampling*, Entropy **25** (2023), 347.

[A6] P. Dergham, F. Aumayr, E. Lamour, S. Macé, C. Prigent, S. Steydli, D. Vernhet, M. Werl, R. A. Wilhelm, and M. Trassinelli, *Toward probing surface magnetism with highly charged ions*, Atoms **10** (2022), 151.

[A7] M. Jolly, S. Voikopoulos, E. Lamour, A. Méry, A. Bräuning-Demian, J.-Y. Chesnel, A. Gumberidze, M. Lestinsky, S. Macé, C. Prigent, J.-M. Ramillon, J. Rangama, P. Rousseau, D. Schury, U. Spillmann, S. Steydli, T. Stöhlker, M. Trassinelli, and D. Vernhet, *Performance of a keV/u ion spectrometer for the FISIC platform*, Atoms **10** (2022), 146.

[A8] M. Trassinelli, *Conditional probabilities of measurements, quantum time, and the Wigner's-friend case*, Phys. Rev. A **105** (2022), 032213.

[A9] A. Lévy, M. D. A. Villa, G. Laurens, V. Blanchet, J. Bozek, J. Gaudin, E. Lamour, S. Macé, P. Mignon, A. R. Milosavljević, C. Nicolas, M. Patanen, C. Prigent, E. Robert, S. Steydli, M. Trassinelli, D. Vernhet, O. Veteläinen, and D. Amans, *Surface chemistry of gold nanoparticles produced by laser ablation in pure and saline water*, Langmuir **37** (2021), 5783–5794.

[A10] A. Hirtl, D. F. Anagnostopoulos, D. S. Covita, H. Fuhrmann, H. Gorke, D. Gotta, A. Gruber, M. Hennebach, P. Indelicato, T. S. Jensen, E. O. L. Bigot, Y. W. Liu, V. E. Markushin, J. Marton, M. Nekipelov, J. M. F. dos Santos, L. M. Simons, T. Strauch, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Redetermination of the strong-interaction width in pionic hydrogen*, Eur. J. Phys. A **57** (2021), 70.

[A11] M. Trassinelli, *Conditional probability and interferences in generalized measurements with or without definite causal order*, Phys. Rev. A **102** (2020), 052224.

[A12] J. Machado, G. Bian, N. Paul, M. Trassinelli, P. Amaro, M. Guerra, C. I. Szabo, A. Gumberidze, J. M. Isac, J. P. Santos, J. P. Desclaux, and P. Indelicato, *Reference-free measurements of the* $1s2s2p\,^2P^o_{1/2,3/2} \to 1s^2 2s\,^2S_{1/2}$ *and* $1s2s2p\,^4P_{5/2} \to 1s^2 2s\,^2S_{1/2}$ *transition energies and widths in lithiumlike sulfur and argon ions*, Phys. Rev. A **101** (2020), 062505.

[A13] M. Trassinelli and P. Ciccodicola, *Mean shift cluster recognition method implementation in the nested sampling algorithm*, Entropy **22** (2020), 185.

[A14] T. Gassner, A. Gumberidze, M. Trassinelli, R. Heß, U. Spillmann, D. Banaś, K.-H. Blumenhagen, F. Bosch, C. Brandau, W. Chen, C. Dimopoulou, E. Förster, R. Grisenti, S. Hagmann, P.-M. Hillenbrand, P. Indelicato, P. Jagodzinski, T. Kämpfer, M. Lestinsky, D. Liesen, Y. Litvinov, R. Loetzsch, B. Manil, R. Märtin, F. Nolden, N. Petridis, M. Sanjari, K. Schulze, M. Schwemlein, A. Simionovici, M. Steck, T. Stöhlker, C. Szabo, S. Trotsenko, I. Uschmann, G. Weber, O. Wehrhan, N. Winckler, D. Winters, N. Winters, E. Ziegler, and H. Beyer, *High-resolution wavelength-dispersive spectroscopy of K-shell transitions in hydrogen-like gold*, X-Ray Spectrom. **49** (2020), 204–208.

[A15] D. Schury, A. Kumar, A. Méry, J.-Y. Chesnel, A. Lévy, S. Macé, C. Prigent, J.-M. Ramillon, J. Rangama, P. Rousseau, S. Steydli, M. Trassinelli, D. Vernhet, and E. Lamour, *An electrostatic in-line charge-state purification system for multicharged ions in the kiloelectronvolt energy range*, Rev. Sci. Instrum. **90** (2019), 083306.

[A16] E. V. Trandafir, O. F. Caltun, R. Ciocarlan, A. Pui, R. Hempelmann, L. Diamandescu, S. Cervera, M. Trassinelli, and D. Vernhet, *Effect of slow charged 90 keV* Ne^{8+} *ions on zinc ferrite nanoparticles*, Mater. Res. Express **6** (2019), 095077.

[A17] M. D. A. Villa, J. Gaudin, D. Amans, F. Boudjada, J. Bozek, R. E. Grisenti, E. Lamour, G. Laurens, S. Macé, C. Nicolas, I. Papagiannouli, M. Patanen, C. Prigent, E. Robert, S. Steydli,

M. Trassinelli, D. Vernhet, and A. Lévy, *Assessing the surface oxidation state of free-standing gold nanoparticles produced by laser ablation*, Langmuir **35** (2019), 11859–11871.

[A18] M. Trassinelli, *Relational quantum mechanics and probability*, Found. Phys. **48** (2018), 1092–1111.

[A19] T. Gassner, M. Trassinelli, R. Heß, U. Spillmann, D. Banaś, K. H. Blumenhagen, F. Bosch, C. Brandau, W. Chen, D. Chr, E. Förster, R. E. Grisenti, A. Gumberidze, S. Hagmann, P. M. Hillenbrand, P. Indelicato, P. Jagodzinski, T. Kämpfer, K. Chr, M. Lestinsky, D. Liesen, Y. A. Litvinov, R. Loetzsch, B. Manil, R. Märtin, F. Nolden, N. Petridis, M. S. Sanjari, K. S. Schulze, M. Schwemlein, A. Simionovici, M. Steck, T. Stöhlker, C. I. Szabo, S. Trotsenko, I. Uschmann, G. Weber, O. Wehrhan, N. Winckler, D. F. A. Winters, N. Winters, E. Ziegler, and H. F. Beyer, *Wavelength-dispersive spectroscopy in the hard x-ray regime of a heavy highly-charged ion: the 1s Lamb shift in hydrogen-like gold*, New J. Phys. **20** (2018), 073033.

[A20] I. Papagiannouli, M. Patanen, V. Blanchet, J. D. Bozek, M. de Anda Villa, M. Huttula, E. Kokkonen, E. Lamour, E. Mevel, E. Pelimanni, A. Scalabre, M. Trassinelli, D. M. Bassani, A. Lévy, and J. Gaudin, *Depth profiling of the chemical composition of free-standing carbon dots using x-ray photoelectron spectroscopy*, J. Phys. Chem. A **122** (2018), 14889–14897.

[A21] D. S. Covita, D. F. Anagnostopoulos, H. Fuhrmann, H. Gorke, D. Gotta, A. Gruber, A. Hirtl, T. Ishiwatari, P. Indelicato, T. S. Jensen, E.-O. L. Bigot, V. E. Markushin, M. Nekipelov, V. N. Pomerantsev, V. P. Popov, J. M. F. dos Santos, P. Schmid, L. M. Simons, M. Theisen, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Line shape analysis of the kβ transition in muonic hydrogen*, Eur. Phys. J. D **72** (2018), 72.

[A22] S. Cervera, M. Trassinelli, M. Marangolo, C. Carrétéro, V. Garcia, S. Hidki, E. Jacquet, E. Lamour, A. Lévy, S. Macé, C. Prigent, J. P. Rozet, S. Steydli, and D. Vernhet, *Modulating the phase transition temperature of giant magnetocaloric thin films by ion irradiation*, Phys. Rev. Materials **1** (2017), 065402.

[A23] M. Trassinelli, *Bayesian data analysis tools for atomic physics*, Nucl. Instrum. Methods B **408** (2017), 301–312.

[A24] A. Gumberidze, C. Kozhuharov, R. T. Zhang, S. Trotsenko, Y. S. Kozhedub, R. D. DuBois, H. F. Beyer, K. H. Blumenhagen, C. Brandau, A. Bräuning-Demian, W. Chen, O. Forstner, B. Gao, T. Gassner, R. E. Grisenti, S. Hagmann, P. M. Hillenbrand, P. Indelicato, A. Kumar, M. Lestinsky, Y. A. Litvinov, N. Petridis, D. Schury, U. Spillmann, C. Trageser, M. Trassinelli, X. Tu, and T. Stöhlker, *Impact parameter sensitive study of inner-shell atomic processes in the experimental storage ring*, Nucl. Instrum. Methods B **408** (2017), 27–30.

[A25] M. Trassinelli, L. B. Carlsson, S. Cervera, M. Eddrief, V. H. Etgens, E. V. Gafton, E. Lacaze, E. Lamour, A. Lévy, S. Macé, C. Prigent, J. P. Rozet, S. Steydli, M. Marangolo, and D. Vernhet, *Low energy ne ion beam induced-modifications of magnetic properties in MnAs thin films*, J. Phys. Condens. Matter **29** (2017), 055001.

[A26] M. Lestinsky, V. Andrianov, B. Aurand, V. Bagnoud, D. Bernhardt, H. Beyer, S. Bishop, K. Blaum, A. Bleile, A. Borovik, F. Bosch, C. Bostock, C. Brandau, A. Bräuning-Demian, I. Bray, T. Davinson, B. Ebinger, A. Echler, P. Egelhof, A. Ehresmann, M. Engström, C. Enss, N. Ferreira, D. Fischer, A. Fleischmann, E. Förster, S. Fritzsche, R. Geithner, S. Geyer, J. Glorius,

K. Göbel, O. Gorda, J. Goullon, P. Grabitz, R. Grisenti, A. Gumberidze, S. Hagmann, M. Heil, A. Heinz, F. Herfurth, R. Heß, P.-M. Hillenbrand, R. Hubele, P. Indelicato, A. Källberg, O. Kester, O. Kiselev, A. Knie, C. Kozhuharov, S. Kraft-Bermuth, T. Kühl, G. Lane, Y. Litvinov, D. Liesen, X. Ma, R. Märtin, R. Moshammer, A. Müller, S. Namba, P. Neumeyer, T. Nilsson, W. Nörtershäuser, G. Paulus, N. Petridis, M. Reed, R. Reifarth, P. Reiß, J. Rothhardt, R. Sanchez, M. Sanjari, S. Schippers, H. Schmidt, D. Schneider, P. Scholz, R. Schuch, M. Schulz, V. Shabaev, A. Simonsson, J. Sjöholm, O. Skeppstedt, K. Sonnabend, U. Spillmann, K. Stiebing, M. Steck, T. Stöhlker, A. Surzhykov, S. Torilov, E. Träbert, M. Trassinelli, S. Trotsenko, X. Tu, I. Uschmann, P. Walker, G. Weber, D. Winters, P. Woods, H. Zhao, and Y. Zhang, *Physics book: CRYRING@ESR*, Eur. Phys. J. Spec. Top. **225** (2016), 797–882.

[A27] M. Trassinelli, *Energy cost and optimisation in breath-hold diving*, J. Theor. Biol. **396** (2016), 42–52.

[A28] E. V. Gafton, G. Bulai, O. F. Caltun, S. Cervera, S. Macé, M. Trassinelli, S. Steydli, and D. Vernhet, *Structural and magnetic properties of zinc ferrite thin films irradiated by 90 keV neon ions*, App. Surf. Sci. **379** (2016), 171–178.

[A29] E. Lamour, P. D. Fainstein, M. Galassi, C. Prigent, C. A. Ramirez, R. D. Rivarola, J. P. Rozet, M. Trassinelli, and D. Vernhet, *Extension of charge-state-distribution calculations for ion-solid collisions towards low velocities and many-electron ions*, Phys. Rev. A **92** (2015), 042703.

[A30] E. Lamour, C. Prigent, J.-M. Ramillon, J.-P. Rozet, S. Steydli, M. Trassinelli, and D. Vernhet, *High-resolution X-ray spectroscopy to probe quantum dynamics in collisions of $Ar^{17+,18+}$ ions with atoms and solids, towards clusters*, J. Phys. B **48** (2015), 144016.

[A31] A. Gumberidze, D. B. Thorn, C. J. Fontes, B. Najjari, H. L. Zhang, A. Surzhykov, A. Voitkiv, S. Fritzsche, D. Banaś, H. Beyer, W. Chen, R. D. DuBois, S. Geyer, R. E. Grisenti, S. Hagmann, M. Hegewald, S. Hess, C. Kozhuharov, R. Märtin, N. Petridis, R. Reuschl, A. Simon, U. Spillmann, M. Trassinelli, S. Trotsenko, G. Weber, D. F. A. Winters, N. Winters, D. Yu, and T. Stöhlker, *Ground-state excitation of heavy highly-charged ions*, J. Phys. B **48** (2015), 144006.

[A32] H. F. Beyer, T. Gassner, M. Trassinelli, R. Heß, U. Spillmann, D. Banaś, K.-H. Blumenhagen, F. Bosch, C. Brandau, W. Chen, C. Dimopoulou, E. Förster, R. E. Grisenti, A. Gumberidze, S. Hagmann, P.-M. Hillenbrand, P. Indelicato, P. Jagodzinski, T. Kämpfer, C. Kozhuharov, M. Lestinsky, D. Liesen, Y. A. Litvinov, R. Loetzsch, B. Manil, R. Märtin, F. Nolden, N. Petridis, M. S. Sanjari, K. S. Schulze, M. Schwemlein, A. Simionovici, M. Steck, T. Stöhlker, C. I. Szabo, S. Trotsenko, I. Uschmann, G. Weber, O. Wehrhan, N. Winckler, D. F. A. Winters, N. Winters, and E. Ziegler, *Crystal optics for precision X-ray spectroscopy on highly charged ions—conception and proof*, J. Phys. B **48** (2015), 144010.

[A33] P. Jagodziński, M. Pajek, D. Banaś, H. F. Beyer, M. Trassinelli, and T. Stöhlker, *Ray-tracing simulations of spherical johann diffraction spectrometer for in-beam X-ray experiments*, Nucl. Instrum. Methods B **753** (2014), 121–130.

[A34] M. Hennebach, D. F. Anagnostopoulos, A. Dax, H. Fuhrmann, D. Gotta, A. Gruber, A. Hirtl, P. Indelicato, Y. W. Liu, B. Manil, V. E. Markushin, A. J. Rusi el Hassani, L. M. Simons, M. Trassinelli, and J. Zmeskal, *Hadronic shift in pionic hydrogen*, Eur. Phys. J. A **50** (2014), 1–10.

[A35] P. Amaro, C. I. Szabo, S. Schlesser, A. Gumberidze, E. G. Kessler Jr, A. Henins, E. O. Le Bigot, M. Trassinelli, J. M. Isac, P. Travers, M. Guerra, J. P. Santos, and P. Indelicato, *A vacuum double-crystal spectrometer for reference-free X-ray spectroscopy of highly charged ions*, Radiat. Phys. Chem. **98** (2014), 132–149.

[A36] D. Gotta, D. S. Covita, D. F. Anagnostopoulos, H. Fuhrmann, H. Gorke, A. Gruber, A. Hirtl, T. Ishiwatari, P. Indelicato, E. O. Le Bigot, M. Nekipelov, V. Pomerantsev, M. Popov, J. M. F. dos Santos, P. Schmid, L. M. Simons, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Precision measurement of the (3p–1s) X-ray transition in muonic hydrogen*, Phys. Part. Nuclei **45** (2014), 181–183.

[A37] S. Schlesser, S. Boucard, D. S. Covita, J. M. F. dos Santos, H. Fuhrmann, D. Gotta, A. Gruber, M. Hennebach, A. Hirtl, P. Indelicato, E. O. Le Bigot, L. M. Simons, L. Stingelin, M. Trassinelli, J. F. C. A. Veloso, A. Wasser, and J. Zmeskal, *High-accuracy X-ray line standards in the 3 keV region*, Phys. Rev. A **88** (2013), 022503.

[A38] M. Trassinelli, V. E. Gafton, M. Eddrief, V. H. Etgens, S. Hidki, E. Lacaze, E. Lamour, X. Luo, M. Marangolo, J. Mérot, C. Prigent, R. Reuschl, J. P. Rozet, S. Steydli, and D. Vernhet, *Magnetic properties of MnAs thin films irradiated with highly charged ions*, Nucl. Instrum. Methods B **317** (2013), 154–158.

[A39] M. Trassinelli, C. Prigent, E. Lamour, F. Mezdari, J. Mérot, R. Reuschl, J. P. Rozet, S. Steydli, and D. Vernhet, *Investigation of slow collisions for (quasi) symmetric heavy systems: what can be extracted from high resolution X-ray spectra*, J. Phys. B **45** (2012), 085202.

[A40] D. Atanasov, N. Winckler, D. Balabanski, L. Batist, F. Bosch, D. Boutin, C. Brandau, C. Dimopoulou, H. Essel, T. Faestermann, H. Geissel, I. Hachiuma, S. Hess, T. Izumikawa, P. Kienle, R. Knöbel, C. Kozhuharov, J. Kurcewicz, N. Kuzminchuk, S. Litvinov, Y. Litvinov, R. Mao, R. Märtin, M. Mazzocco, G. Münzenberg, K. Namihira, F. Nolden, T. Ohtsubo, Z. Patyk, R. Reuschl, M. Sanjari, C. Scheidenberger, D. Shubina, U. Spillmann, M. Steck, T. Stöhlker, B. Sun, T. Suzuki, M. Trassinelli, I. Tupitsyn, H. Weick, M. Winkler, D. Winters, and T. Yamaguchi, *Half-life measurements of stored fully ionized and hydrogen-like ^{122}I ions*, Eur. Phys. J. A **48** (2012), 1–6.

[A41] D. B. Thorn, A. Gumberidze, S. Trotsenko, D. Banas, H. Beyer, C. J. Bostock, I. Bray, W. Chen, R. DuBois, C. J. Fontes, S. Fritzsche, D. V. Fursa, R. Grisenti, S. Geyer, S. Hagmann, S. Hess, M. Hegewald, C. Kozhuharov, R. Märtin, I. Orban, N. Petridis, R. Reuschl, A. Simon, U. Spillmann, A. Surzhykov, M. Trassinelli, G. Weber, D. F. A. Winters, N. Winters, H. L. Zhang, and T. Stöhlker, *Polarization and anisotropic emission of K-shell radiation from heavy few electron ions*, Can. J. Phys. **89** (2011), 513–519.

[A42] T. Strauch, F. Amaro, D. Anagnostopoulos, P. Bühler, D. Covita, H. Gorke, D. Gotta, A. Gruber, A. Hirtl, P. Indelicato, E. Le Bigot, M. Nekipelov, J. dos Santos, P. Schmid, S. Schlesser, L. Simons, M. Trassinelli, J. Veloso, and J. Zmeskal, *Pionic deuterium*, Eur. Phys. J. A **47** (2011), 1–19.

[A43] A. Gumberidze, M. Trassinelli, N. Adrouche, C. I. Szabo, P. Indelicato, F. Haranger, J. M. Isac, E. Lamour, E. O. Le Bigot, J. Merot, C. Prigent, J. P. Rozet, and D. Vernhet, *Electronic temperatures, densities, and plasma X-ray emission of a 14.5 GHz electron-cyclotron resonance ion source*, Rev. Sci. Instrum. **81** (2010), 033303–10.

[A44] A. Kumar, S. Trotsenko, A. V. Volotka, D. Banaś, H. F. Beyer, H. Bräuning, A. Gumberidze, S. Hagmann, S. Hess, C. Kozhuharov, R. Reuschl, U. Spillmann, M. Trassinelli, G. Weber, and T. Stöhlker, *Spectral shape of the 2E1 decay from 2s state in He-like tin*, Eur. Phys. J. Spec. Top. **169** (2009), 19–22.

[A45] H. F. Beyer, D. Attia, D. Banas, E. O. Le Bigot, F. Bosch, J. C. Dousse, E. Förster, A. Gumberidze, S. Hagmann, S. Hefl, J. Hoszowska, P. Indelicato, P. Jagodzinski, C. Kozhuharov, T. Krings, D. Liesen, X. Ma, B. Manil, I. Mohos, M. Pajek, D. Protic, R. Reuschl, J. Rzadkiewicz, A. Simionovici, U. Spillmann, Z. Stachura, T. Stöhlker, M. Trassinelli, S. Trotsenko, A. Warczak, O. Wehrhan, and E. Ziegler, *Crystal optics for hard-X-ray spectroscopy of highly charged ions*, Spectrochim. Acta, Part B **64** (2009), 736–743.

[A46] V. Andrianov, K. Beckert, P. Beller, A. Bleile, P. Egelhof, A. Gumberidze, S. Ilieva, O. Kiselev, C. Kilbourne, H. J. Kluge, S. Kraft-Bermuth, D. McCammon, J. Meier, R. Reuschl, T. Stöhlker, and M. Trassinelli, *First experiments aiming for precise Lamb shift measurements on hydrogen-like heavy ions with low temperature calorimeters*, J. Low Temp. Phys. **151** (2008), 1049–1054.

[A47] M. Trassinelli and P. Indelicato, *Relativistic calculations of pionic and kaonic atoms' hyperfine structure*, Phys. Rev. A **76** (2007), 012510–7.

[A48] M. Trassinelli, D. Banas, H. F. Beyer, P. Jagodzinski, A. Kumar, M. Pajek, and T. Stöhlker, *High accuracy crystal spectroscopy of the n = 2 energy level of helium-like uranium*, Can. J. Phys. **85** (2007), 441–451.

[A49] P. Indelicato, S. Boucard, D. S. Covita, D. Gotta, A. Gruber, A. Hirtl, H. Fuhrmann, E. O. Le Bigot, S. Schlesser, J. M. F. dos Santos, L. M. Simons, L. Stingelin, M. Trassinelli, J. Veloso, A. Wasser, and J. Zmeskal, *Highly charged ion X-rays from Electron-Cyclotron Resonance ion sources*, Nucl. Instrum. Methods B **580** (2007), 8–13.

[A50] J. Rzadkiewicz, T. Stöhlker, D. Banas, H. F. Beyer, F. Bosch, C. Brandau, C. Z. Dong, S. Fritzsche, A. Gojska, A. Gumberidze, S. Hagmann, D. C. Ionescu, C. Kozhuharov, T. Nandi, R. Reuschl, D. Sierpowski, U. Spillmann, A. Surzhykov, S. Tashenov, M. Trassinelli, and S. Trotsenko, *Selective population of the* $[1s2s]\ ^1S_0$ *and* $[1s2s]\ ^3S_1$ *states of He-like uranium*, Phys. Rev. A **74** (2006), 012511–7.

[A51] P. Indelicato, E.-O. Le Bigot, M. Trassinelli, D. Gotta, M. Hennebach, N. Nelms, C. David, and L. M. Simons, *Characterization of a charge-coupled device array for Bragg spectroscopy*, Rev. Sci. Instrum. **77** (2006), 043107.

[A52] S. Chatterjee, H. F. Beyer, D. Liesen, T. Stohlker, A. Gumberidze, C. Kozhuharov, D. Banas, D. Protic, K. Beckert, P. Beller, T. Krings, F. Bosch, B. Franzke, S. Hagmann, J. Hoszowska, P. Indelicato, H.-J. Kluge, X. Ma, B. Manil, I. Mohos, F. Nolden, U. Popp, A. Simionovici, D. Sierpowski, M. Steck, U. Spillmann, C. Brandau, E. Förster, Z. Stachura, S. Tashenov, M. Trassinelli, A. Warczak, O. Wehrhan, E. Ziegler, S. Trotsenko, and R. Reuschl, *The FOCAL spectrometer for accurate x-ray spectroscopy of fast heavy ions*, Nucl. Instrum. Methods B **245** (2006), 67–71.

[A53] H. F. Beyer, T. Stöhlker, D. Banas, D. Liesen, D. Protić, K. Beckert, P. Beller, J. Bojowald, F. Bosch, E. Förster, B. Franzke, A. Gumberidze, S. Hagmann, J. Hoszowska, P. Indelicato, O. Klepper, H.-J. Kluge, S. Köig, C. Kozhuharov, X. Ma, B. Manil, I. Mohos, A. Oršic-Muthig,

F. Nolden, U. Popp, A. Simionovici, D. Sierpowski, U. Spillmann, Z. Stachura, M. Steck, S. Tachenov, M. Trassinelli, A. Warczak, O. Wehrhan, and E. Ziegler, *FOCAL: X-ray optics for accurate spectroscopy*, Spectrochim. Acta, Part B **59** (2004), 1535–1542.

[A54] D. F. Anagnostopoulos, M. Cargnelli, H. Fuhrmann, M. Giersch, D. Gotta, A. Gruber, M. Hennebach, A. Hirtl, P. Indelicato, Y. W. Liu, B. Manil, V. E. Markushin, J. Marton, N. Nelms, L. M. Simons, M. Trassinelli, and J. Zmeskal, *Precision measurements in pionic hydrogen*, Nucl. Phys. A **721** (2003), 849C–852C.

[A55] A. V. Malyshev, Y. S. Kozhedub, and V. M. Shabaev, *Ab initio calculations of the* $2p_{3/2} \to 2s$ *transition in He-, Li-, and Be-like uranium*, Phys. Rev. A **107** (2023), 042806.

Books and books chapters

[B1] L. Julien, M. Trassinelli, and M. Plimmer, *Hydrogen and hydrogenic systems*, Springer, in preparation.

[B2] E. V. Trandafir, M. Trassinelli, C. Prigent, S. Steydly, D. Vernhet, and O. F. Caltun, *21 - ferrite nanoparticles and thin films irradiated by slow highly charged ion beams*, in Ferrite Nanostructured Magnetic Materials, (J. Pal Singh, K. H. Chae, R. C. Srivastava, and O. F. Caltun, eds.), Woodhead Publishing, 2023, pp. 391–405.

[B3] T. Stöhlker, A. Gumberidze, M. Trassinelli, V. Andrianov, H. Beyer, S. Kraft-Bermuth, A. Bleile, P. Egelhof, and F. collaboration, *Quantum electrodynamics in extreme fields: Precision spectroscopy of high- z h-like systems*, in Precision Physics of Simple Atoms and Molecules, Vol. 745 of *Lecture Notes in Physics*, Springer, Berlin / Heidelberg, 2008, pp. 157–163.

[B4] P. Indelicato, M. Trassinelli, D. F. Anagnostopoulos, S. Boucard, D. S. Covita, G. Borchert, A. Dax, J. P. Egger, D. Gotta, A. Gruber, A. Hirtl, M. Hennebach, H. Fuhrmann, E. O. Le Bigot, Y. W. Liu, B. Manil, N. Nelms, S. Schlesser, J. M. F. dos Santos, L. M. Simons, L. Stingelin, J. Veloso, A. Wasser, A. Wells, and J. Zmeskal, *Experiments on highly charged heavy ions in conjunction with exotic atoms*, in Current Trends in Atomic Physics, (S. Salomonson and E. Lindroth, eds.), Vol. 53 of *Advances in Quantum Chemistry*, Academic Press, 2008, pp. 217–235.

[B5] T. Stöhlker, A. Gumberidze, A. Kumar, R. Reuschl, and M. Trassinelli, *Quantum electrodynamics in one- and two-electron high-z ions*, in Current Trends in Atomic Physics, (S. Salomonson and E. Lindroth, eds.), Vol. 53 of *Advances in Quantum Chemistry*, Academic Press, 2008, pp. 57–65.

[B6] D. Gotta, F. Amaro, D. F. Anagnostopoulos, S. Biri, D. S. Covita, H. Gorke, A. Gruber, M. Hennebach, A. Hirtl, T. Ishiwatari, P. Indelicato, T. Jensen, E. O. Le Bigot, J. Marton, M. Nekipelov, J. M. F. dos Santos, S. Schlesser, P. Schmid, L. M. Simons, T. Strauch, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Pionic hydrogen*, in Precision Physics of Simple Atoms and Molecules, Vol. 745 of *Lecture Notes in Physics*, Springer, Berlin / Heidelberg, 2008, pp. 165–186.

Referred proceedings

[C1] L. Duval, R. Loetzsch, H. Beyer, D. Banaś, P. Dergham, J. Glorius, R. E. Grisenti, M. Guerra, A. Gumberidze, P.-M. Hillenbrand, P. Jagodziński, E. Lamour, Y. Litvinov, J. Machado, G. Paulus, N. Paul, N. Petridis, J.-P. Santos, M. Scheidel, R. S. Sidhu, U. Spillmann, S. Steydli, K. Szary, S. Trotsenko, I. Uschmann, G. Weber, T. Stöhlker, P. Indelicato, and M. Trassinelli, *X-ray spectroscopy of few-electron uranium ions for tests of QED*, PoS **FAIRness2022** (2023), 012.

[C2] D. Gotta, F. Amaro, D. Anagnostopoulos, P. Bühler, D. Covita, H. Fuhrmann, H. Gorke, A. Gruber, M. Hennebach, A. Hirtl, T. Ishiwatari, P. Indelicato, T. Jensen, E.-O. Le Bigot, Y.-W. Liu, B. Manil, V. Markushin, J. Marton, M. Nekipelov, V. Pomerantsev, V. Popov, A. J. R. el Hassani, J. M. F. dos Santos, S. Schlesser, P. Schmid, L. Simons, T. Strauch, M. Theisen, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Pionic hydrogen and deuterium*, EPJ web conf. **262** (2022), 01005.

[C3] M. Trassinelli, *An introduction to bayesian statistics for atomic physicists*, J. Phys. CS **1412** (2020), 062008.

[C4] A. Gumberidze, C. Kozhuharov, R. T. Zhang, S. Trotsenko, Y. S. Kozhedub, R. D. Du, H. Bois, F. Beyer, K. H. Blumenhagen, C. Brandau, A. Bräuning-Demian, W. Chen, O. Forstner, B. Gao, T. Gassner, R. E. Grisenti, S. Hagmann, P. M. Hillenbrand, P. Indelicato, A. Kumar, M. Lestinsky, Y. A. Litvinov, N. Petridis, D. Schury, U. Spillmann, C. Trageser, M. Trassinelli, X. Tu, and T. Stöhlker, *Impact parameter sensitive study of inner-shell atomic processes in* Xe^{54+}*,* $Xe^{52+} \rightarrow Xe$ *collisions*, J. Phys. CS **1412** (2020), 142015.

[C5] M. D. A. Villa, A. Lévy, J. Gaudin, R. Bouillaud, D. Descamps, B. Dorado, N. Fedorov, R. Grisenti, M. Hatifi, H. Jouin, E. Lamour, S. Macé, P. Martin, S. Petit, C. Prigent, R. Sobierajski, S. Steydli, M. Trassinelli, A. Wawro, and D. Vernhet, *Ultrafast laser induced structural dynamics probed by time-resolved photoelectron spectroscopy*, J. Phys. CS **1412** (2020), 132025.

[C6] P. Jagodziński, D. Banaś, M. Pajek, A. Warczak, H. F. Beyer, A. Gumberidze, G. Weber, T. Stohlker, and M. Trassinelli, *Concept and simulations of a high-resolution asymmetric von Hamos x-ray spectrometer for CRYRING@ESR electron cooler*, J. Phys. CS **1412** (2020), 132031.

[C7] A. Lévy, M. D. A. Villa, J. Gaudin, D. Amans, V. Blanchet, F. Boudjada, J. D. Bozek, R. E. Grisenti, E. Lamour, G. Laurens, S. Macé, A. R. Milosavljević, C. Nicolas, I. Papagiannouli, M. Patanen, C. Prigent, E. Robert, S. Steydli, M. Trassinelli, and D. Vernhet, *Surface chemistry of colloidal surfactant-free gold nanoparticles generated by laser ablation*, J. Phys. CS **1412** (2020), 202022.

[C8] D. Schury, A. Méry, J. M. Ramillon, L. Adoui, J. Y. Chesnel, A. Lévy, S. Macé, C. Prigent, J. Rangama, P. Rousseau, S. Steydli, M. Trassinelli, D. Vernhet, A. Gumberidze, T. Stöhlker, A. Bräuning-Demian, C. Hahn, U. Spillmann, and E. Lamour, *The low energy beamline of the FISIC experiment: current status of construction and performance*, J. Phys. CS **1412** (2020), 162011.

[C9] M. Trassinelli, *The nested_fit data analysis program*, Proceedings **33** (2019), 14.

[C10] D. Atanasov, K. Blaum, F. Bosch, C. Brandau, P. Bühler, R. B. Cakirli, X. C. Chen, I. Dillmann, T. Faestermann, B. S. Gao, H. Geissel, R. Gernhäuser, J. Glorius, R. Grisenti, A. Gumberidze, S. Hagmann, P. M. Hillenbrand, P. Kienle, C. Kozhuharov, G. Lane, C. Langer, C. Lederer-Woods, M. Lestinsky, S. A. Litvinov, A. L. Yu, X. W. Ma, M. A. Najafi, F. Nolden, T. Ohtsubo, A. Ozawa, F. C. Ozturk, Z. Patyk, M. K. Pavicevic, N. Petridis, R. Reifarth, R. Sanchez, M. S. Sanjari, D. Schneider, V. Shevelko, U. Spillmann, M. Steck, T. Stöhlker, B. H. Sun, F. Suzaki, T. Suzuki, S. Y. Torilov, C. Trageser, M. Trassinelli, X. L. Tu, T. Uesaka, P. M. Walker, M. Wang, H. Weick, N. Winckler, P. J. Woods, H. S. Xu, T. Yamaguchi, Y. Yamaguchi, X. L. Yan, Y. H. Zhang, X. H. Zhou, S. T. Ilima, and A. R. C. Nuc, *Studies at the border between nuclear and atomic physics: Weak decays of highly charged ions*, J. Phys. CS **875** (2017), 012008.

[C11] A. Kumar, A. Méry, L. Adoui, J. Y. Chesnel, A. Lévy, S. Macé, C. Prigent, J. M. Ramillon, J. Rangama, J. P. Rozet, P. Rousseau, S. Steydli, M. Trassinelli, D. Vernhet, and E. Lamour, *Numerical simulations of purification and final charge state analysis of the slow ion beam for the FISIC project*, J. Phys. CS **875** (2017), 092025.

[C12] M. Trassinelli, D. Anagnostopoulos, G. Borchert, A. Dax, J.-P. Egger, D. Gotta, M. Hennebach, P. Indelicato, Y.-W. Liu, B. Manil, N. Nelms, L. Simons, and A. Wells, *Measurement of the charged pion mass using a low-density target of light atoms*, EPJ web conf. **130** (2016), 01022.

[C13] L. Bernard Carlsson, C. Prigent, E. Lamour, S. Macé, J. P. Rozet, S. Steydli, M. Trassinelli, and D. Vernhet, *X-ray spectroscopy as a tool to enlighten the growth of Van der Waals nanoparticles in a supersonic jet*, J. Phys. CS **635** (2015), 032030.

[C14] E. Lamour, P. D. Fainstein, M. Galassi, C. Prigent, C. A. Ramirez, R. D. Rivarola, J. P. Rozet, M. Trassinelli, and D. Vernhet, *Improvement of the ETACHA code towards low velocities and many-electron ions*, J. Phys. CS **635** (2015), 032022.

[C15] S. Cervera, M. Trassinelli, M. Marangolo, L. B. Carlsson, M. Eddrief, V. H. Etgens, V. Gafton, S. Hidki, E. Lamour, A. Lévy, S. Macé, C. Prigent, J. P. Rozet, S. Steydli, Y. Zheng, and D. Vernhet, *Hints on the origin of the thermal hysteresis suppression in giant magnetocaloric thin films irradiatied with highly charged ions*, J. Phys. CS **635** (2015), 012028.

[C16] S. Cervera, M. Trassinelli, M. Marangolo, L. Bernard-Carlsson, M. Eddrief, V. H. Etgens, V. Gafton, S. Hidki, E. Lacaze, E. Lamour, C. Prigent, J. P. Rozet, S. Steydli, Y. Zheng, and D. Vernhet, *Impacts of highly charged ions as seeds in a magneto-structural phase transition of magnetocaloric thin films*, J. Phys. CS **635** (2015), 032021.

[C17] D. Gotta, F. D. Amaro, D. F. Anagnostopoulos, P. Bühler, H. Gorke, D. S. Covita, H. Fuhrmann, A. Gruber, M. Hennebach, A. Hirtl, T. Ishiwatari, P. Indelicato, T. S. Jensen, E. O. Le Bigot, V. E. Markushin, J. Marton, M. Nekipelov, V. N. Pomerantsev, V. P. Popov, J. M. F. dos Santos, S. Schlesser, P. Schmid, L. M. Simons, T. Strauch, M. Theisen, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Pionic hydrogen and friends*, Hyperfine Interact. **234** (2015), 105–111.

[C18] X. Fléchard, L. Adoui, G. Ban, P. Boduch, A. Cassimi, J. Y. Chesnel, D. Durand, F. Frémont, S. Guillous, J. P. Grandin, D. Hennecart, E. Jacquet, P. Jardin, E. Lamour, E. Liénard, D. Lelièvre, L. Maunoury, A. Méry, O. Naviliat-Cuncic, C. Prigent, J. M. Ramillon, J. Rangama, J. P. Rozet, S. Steydli, M. Trassinelli, and D. Vernhet, *Primary processes: from atoms to diatomic molecules and clusters*, J. Phys. CS **629** (2015), 012001.

[C19] H. Yin, G. Wachter, C. Deiss, C. Lemell, J. Burgdörfer, E. Lamour, C. Prigent, C. Ramond, J. P. Rozet, S. Steydli, M. Trassinelli, and D. Vernhet, *keV electron heating in laser-cluster interaction probed by X-ray and electron spectroscopy*, J. Phys. CS **488** (2014), 132033.

[C20] A. Salehzadeh, M. Trassinelli, C. Prigent, E. Lamour, J. P. Rozet, S. Steydli, D. Vernhet, and T. Kirchner, *X-ray emission from highly-charged ions after electron transfer in slow collisions: the role of multiple capture processes*, J. Phys. CS **488** (2014), 082006.

[C21] C. Prigent, E. Lamour, J.-P. Rozet, S. Steydli, M. Trassinelli, and D. Vernhet, *Electron capture at low velocity in the collision of Ar^{17+} ions with atoms, clusters and solids*, J. Phys. CS **488** (2014), 012029.

[C22] C. Prigent, M. Comte, O. Gobert, D. Guillaumet, J. Habib, E. Lamour, M. Perdrix, C. Ramond, J.-P. Rozet, S. Steydli, M. Trassinelli, and D. Vernhet, *Role of the laser wavelength in the x-ray production for clusters under intense laser pulses*, J. Phys. CS **488** (2014), 132021.

[C23] R. Reuschl, T. Gassner, U. Spillmann, A. Bräuning-Demian, A. Ananyeva, H. Beyer, K. H. Blumenhagen, W. Chen, S. Hagmann, M. Hegewald, P. Indelicato, M. Schwemlein, S. Toleikis, M. Trassinelli, S. Trotsenko, D. Winters, N. Winters, and T. Stöhlker, *Lifetime measurement of the* $2\ ^3P_0$ *state in He-like uranium*, Phys. Scripta **T156** (2013), 014024.

[C24] F. Bosch, D. R. Atanasov, C. Brandau, I. Dillmann, C. Dimopoulou, T. Faestermann, H. Geissel, S. Hagmann, P. M. Hillenbrand, P. Kienle, R. Knöbel, C. Kozhuharov, J. Kurcewicz, M. Lestinsky, S. A. Litvinov, Y. A. Litvinov, X. Ma, F. Nolden, T. Ohtsubo, Z. Patyk, R. Reuschl, M. S. Sanjari, C. Scheidenberger, D. Shubina, U. Spillmann, M. Steck, S. Th, B. Sun, M. Trassinelli, S. Trotsenko, X. L. Tu, H. Weick, N. Winckler, M. Winkler, D. Winters, T. Yamaguchi, and X. L. Yan, *Beta decay of highly charged ions*, Phys. Scripta **T156** (2013), 014025.

[C25] D. R. Atanasov, D. Balabanski, L. Batist, K. Blaum, F. Bosch, D. Boutin, C. Brandau, C. Dimopoulou, H. G. Essel, T. Faestermann, H. Geissel, S. Hagmann, R. Hess, P. M. Hillenbrand, P. Kienle, R. Knöbel, C. Kozhuharov, J. Kurcewicz, M. Lestinsky, S. A. Litvinov, A. L. Yu, X. Ma, R. Märtin, M. Mazzocco, G. Münzenberg, F. Nolden, T. Ohtsubo, Z. Patyk, M. S. Sanjari, C. Scheidenberger, D. Shubina, U. Spillmann, M. Steck, S. Th, B. Sun, T. Suzuki, S. Torilov, M. Trassinelli, S. Trotsenko, X. Tu, I. Tupitsyn, H. Weick, N. Winckler, M. Winkler, D. F. A. Winters, N. Winters, H. Xu, T. Yamaguchi, X. Yan, Y. Yuan, and Y. Zhang, *Half-life measurements of highly charged radionuclides*, Phys. Scripta **2013** (2013), 014026.

[C26] S. Trotsenko, A. Kumar, D. Banas, A. V. Volotka, A. Gumberidze, C. Kozhuharov, D. B. Thorn, H. F. Beyer, S. Fritzsche, S. Hagmann, S. Hess, P. Jagodzinski, R. Reuschl, S. Salem, A. Simon, U. Spillmann, M. Trassinelli, L. C. Tribedi, G. Weber, D. Winters, and T. Stöhlker, *Novel approach for studying two-photon transitions in heavy HCI*, J. Phys. CS **388** (2012), 082001.

[C27] M. Trassinelli, C. Ramond, E. Lamour, J. Mérot, C. Prigent, J. P. Rozet, S. Steydli, and D. Vernhet, *Determining clustering properties through the selectivity of collision dynamics*, J. Phys. CS **388** (2012), 082009.

[C28] M. Trassinelli, T. Kirchner, E. Lamour, L. Maunoury, J. Mérot, J. Y. Pacquet, C. Prigent, J. M. Ramillon, R. Reuschl, J. P. Rozet, S. Steydli, and D. Vernhet, *Interaction of slow HCI*

with gaseous targets: absolute x-ray emission cross sections and contribution of multi-capture processes, J. Phys. CS **388** (2012), 082010.

[C29] C. Ramond, E. Lamour, J. Mérot, C. Prigent, R. Reuschl, J. P. Rozet, G. Schiwietz, S. Steydli, M. Trassinelli, and D. Vernhet, *Correlation between X-ray yield and electron spectra in laser-cluster interaction*, J. Phys. CS **388** (2012), 032081.

[C30] A. Gumberidze, D. B. Thorn, S. Trotsenko, D. Banas, H. Beyer, W. Chen, R. D. DuBois, S. Geyer, R. Grisenti, S. Hagmann, M. Hegewald, S. Hess, P. Indelicato, C. Kozhuharov, R. Märtin, I. Orban, N. Petridis, R. Reuschl, A. Simon, U. Spillmann, A. Surzhykov, M. Trassinelli, G. Weber, D. F. A. Winters, N. Winters, D. Yu, and Th.Stöhlker, *Electron- and proton-impact excitation in stored hydrogenlike uranium ions*, J. Phys. CS **388** (2012), 082035.

[C31] D. Gotta, F. D. Amaro, D. F. Anagnostopoulos, P. Bühler, H. Gorke, D. S. Covita, H. Fuhrmann, A. Gruber, M. Hennebach, A. Hirtl, T. Ishiwatari, P. Indelicato, E. O. Le Bigot, J. Marton, M. Nekipelov, J. M. F. Santos, S. Schlesser, P. Schmid, L. M. Simons, T. Strauch, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Pionic hydrogen and deuterium*, Hyperfine Interact. **209** (2012), 57–62.

[C32] M. Trassinelli, A. Kumar, H. F. Beyer, P. Indelicato, R. Märtin, R. Reuschl, Y. S. Kozhedub, C. Brandau, H. Bräuning, S. Geyer, A. Gumberidze, S. Hess, P. Jagodzinski, C. Kozhuharov, D. Liesen, U. Spillmann, S. Trotsenko, G. Weber, D. F. A. Winters, and T. Stöhlker, *Differential energy measurement between He- and Li-like uranium intra-shell transitions*, Phys. Scripta **T144** (2011), 014003.

[C33] A. Kumar, S. Trotsenko, A. V. Volotka, D. Banas, H. F. Beyer, H. Brauning, S. Fritzsche, A. Gumberidze, S. Hagmann, S. Hess, C. Kozhuharov, R. Reuschl, U. Spillmann, M. Trassinelli, G. Weber, and T. Stohlker, *Spectral distribution of the* $2s \rightarrow 1s$ *two-photon transition in atoms and few-electron ions*, Pramana-J. Phys **76** (2011), 331–337.

[C34] A. Gumberidze, T. Stöhlker, D. Banaś, H. Beyer, C. Brandau, H. Bräuning, S. Geyer, S. Hagmann, S. Hess, P. Indelicato, P. Jagodziński, C. Kozhuharov, A. Kumar, D. Liesen, R. Märtin, R. Reuschl, S. Salem, A. Simon, U. Spillmann, M. Trassinelli, S. Trotsenko, G. Weber, and D. Winters, *Precision studies of fundamental atomic structure with heaviest few-electron ions*, Hyperfine Interact. **199** (2011), 59–69.

[C35] D. Gotta, F. D. Amaro, D. F. Anagnostopoulos, A. Bühler, D. S. Covita, H. Gorke, A. Gruber, M. Hennebach, A. Hirtl, P. Indelicato, T. Ishiwatari, E. O. Le Bigot, J. Marton, M. Nekipelov, J. M. F. dos Santos, S. Schlesser, P. Schmid, L. M. Simons, T. Strauch, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Pionic hydrogen*, Phys. Procedia **17** (2011), 69–76.

[C36] T. Strauch, F. D. Amaro, D. F. Anagnostopoulos, P. Bühler, D. S. Covita, H. Gorke, D. Gotta, A. Gruber, A. Hirtl, P. Indelicato, E. O. Le Bigot, M. Nekipelov, J. M. F. dos Santos, P. Schmid, S. Schlesser, L. M. Simons, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Pionic deuterium*, EPJ web conf. **3** (2010), 03006.

[C37] J. Kurcewicz, F. Bosch, H. Geissel, Y. A. Litvinov, N. Winckler, K. Beckert, P. Beller, D. Boutin, C. Brandau, L. Chen, C. Dimopoulou, H. G. Essel, B. Fabian, T. Faestermann, A. Fragner, B. Franzke, E. Haettner, M. Hausmann, S. Hess, P. Kienle, R. Knobel, C. Kozhuharov, S. A. Litvinov, L. Maier, M. Mazzocco, F. Montes, A. Musumarra, C. Nociforo, F. Nolden,

Z. Patyk, W. R. Plass, A. Prochazka, R. Reda, R. Reuschl, C. Scheidenberger, M. Steck, T. Stohlker, B. Sun, K. Takahashi, S. Torilov, M. Trassinelli, H. Weick, and M. Winkler, *Studies of two-body β -decays at the FRS-ESR facility*, Acta Phys. Pol. B **41** (2010), 525–536.

[C38] M. Trassinelli, A. Kumar, H. F. Beyer, P. Indelicato, R. Märtin, R. Reuschl, and T. Stöhlker, *Doppler-tuned Bragg spectroscopy of excited levels in He-like uranium: A discussion of the uncertainty contributions*, J. Phys. CS **163** (2009), 012026.

[C39] M. Trassinelli, S. Bari, H. M. Dang, S. Geyer, E. Lamour, L. Maunoury, H. Merabet, J. Merot, F. Mezdari, J. Y. Pacquet, B. Pascal, C. Prigent, J. M. Ramillon, R. Reuschl, J. P. Rozet, T. Schlatholter, S. Steydli, and D. Vernhet, *Collisions of Ar^{17+} ions with gaseous and solid targets at a few tens of kev/q probed by X-ray spectroscopy*, J. Phys. CS **194** (2009), 132005.

[C40] C. Prigent, E. Lamour, J. Merot, B. Pascal, J. P. Rozet, M. Trassinelli, D. Vernhet, J. Y. Pacquet, L. Maunoury, F. Noury, and J. M. Ramillon, *X-ray spectroscopy characterization of Ar^{17+} produced by an ecris in the afterglow mode*, J. Phys. CS **163** (2009), 012111.

[C41] A. Kumar, S. Trotsenko, A. V. Volotka, D. Banas, H. F. Beyer, H. Brauning, S. Fritzsche, A. Gumberidze, S. Hagmann, S. Hess, C. Kozhuharov, G. Plunien, R. Reuschl, U. Spillmann, M. Trassinelli, G. Weber, and T. Stöhlker, *Two-photon decay in highly charged heavy ions: Spectral shape of the 2e1 ($2\ ^1S_0 \rightarrow 1\ ^1S_0$) in He-like tin*, J. Phys. CS **163** (2009), 012027.

[C42] A. Hirtl and f. t. P. H. collaboration, *Determination of the hadronic width of the ground state in pionic hydrogen*, Hyperfine Interact. **193** (2009), 153–157.

[C43] S. Hess, H. Brauning, U. Spillmann, C. Brandau, S. Geyer, S. Hagmann, M. Hegewald, C. Kozhuharov, T. Krings, A. Kumar, R. Martin, D. Protic, B. O'Rourke, R. Reuschl, M. Trassinelli, S. Trotsenko, G. Weber, D. F. A. Winters, and T. H. Stohlker, *Polarization studies of radiative electron capture into highly-charged uranium ions*, J. Phys. CS **163** (2009), 012072.

[C44] D. Covita, D. Anagnostopoulos, H. Gorke, D. Gotta, A. Gruber, A. Hirtl, T. Ishiwatari, P. Indelicato, E. Le Bigot, M. Nekipelov, J. dos Santos, P. Schmid, L. Simons, M. Trassinelli, J. Veloso, and J. Zmeskal, *Line shape of the $\mu H(3p - 1s)$ transition*, Hyperfine Interact. **193** (2009), 61–67.

[C45] E. O. Le Bigot, S. Boucard, D. S. Covita, D. Gotta, A. Gruber, A. Hirtl, H. Fuhrmann, P. Indelicato, J. M. F. d. Santos, S. Schlesser, L. M. Simons, L. Stingelin, M. Trassinelli, J. F. C. A. Veloso, A. Wasser, and J. Zmeskal, *High-precision x-ray spectroscopy in few-electron ions*, Phys. Scripta **T134** (2009), 014015.

[C46] S. Trotsenko, S. Th, D. Banas, C. Z. Dong, S. Fritzsche, A. Gumberidze, S. Hagmann, S. Hess, P. Indelicato, C. Kozhuharov, M. Nofal, R. Reuschl, J. Rzadkiewicz, U. Spillmann, A. Surzhykov, M. Trassinelli, and G. Weber, *Investigation of the decay properties of the $1s(2s)^2$ state in Li-like uranium*, J. Phys. CS **58** (2007), 141.

[C47] M. Trassinelli, S. Boucard, D. S. Covita, D. Gotta, A. Hirtl, O. Indelicato, P. andLe Bigot, J. M. F. d. Santos, L. M. Simons, L. Stingelin, J. F. C. A. Veloso, A. Wasser, and J. Zmeskal, *He-like argon, chlorine and sulfur spectra measurement from an electron cyclotron resonance ion trap*, J. Phys. CS **58** (2007), 129.

[C48] T. Stöhlker, H. Beyer, A. Gumberidze, A. Kumar, D. Liesen, R. Reuschl, U. Spillmann, and M. Trassinelli, *Ground state Lamb-shift of heavy hydrogen-like ions: status and perspectives*, Hyperfine Interact. **172** (2007), 135–140.

[C49] R. Reuschl, D. Banas, H. F. Beyer, S. Chatterjee, A. Gumberidze, S. Hess, T. Krings, D. Liesen, D. Protic, U. Spillmann, S. Th, M. Trassinelli, S. Trotsenko, Gweber, and F. collaboration, *Recent experimental developments for the lamb shift investigation in heavy ions*, J. Phys. CS **58** (2007), 407.

[C50] D. Banas, P. Jagodzinski, M. Pajek, S. Th, M. Trassinelli, H. F. Beyer, R. Reuschl, and U. Spillmann, *Development of a bragg spectrometer for experiments with highly charged ions at storage rings*, J. Phys. CS **58** (2007), 415.

[C51] D. Gotta, M. Hennebach, Y. W. Liu, V. E. Markushin, L. M. Simons, M. Cargnelli, H. Fuhrmann, M. Giersch, A. Gruber, A. Hirtl, J. Marton, J. Zmeskal, P. Indelicato, B. Manil, M. Trassinelli, D. F. Anagnostopoulos, and N. Nelms, *Precision measurements in pionic hydrogen Paul Scherrer Institut*, Phys. Scripta **T104** (2003), 94–95.

Non-referred proceedings

[D1] F. Barbaresco, A. Mohammad-Djafari, F. Nielsen, and M. Trassinelli, *Preface of the 41st international workshop on bayesian inference and maximum entropy methods in science and engineering*, in Physical Sciences Forum, Vol. 5, 2022, p. 43.

[D2] V. Andrianov, K. Beckert, A. Bleile, C. Chatterjee, A. Echler, P. Egelhof, A. Gumberidze, S. Ilieva, O. Kiselev, C. Kilbourne, H. J. Kluge, S. Kraft-Bermuth, D. McCammon, J. P. Meier, R. Reuschl, T. Stohlker, and M. Trassinelli, *Precise Lamb shift measurements in hydrogen-like heavy ions—status and perspectives*, in The 13th International Workshop on Low Temperature Detectors, Vol. 1185, AIP, Stanford (California), 2009, pp. 99–102.

[D3] C. I. Szabo, D. Attia, A. Gumberidze, P. Indelicato, E.-O. L. Bigot, S. Schlesser, E. Lamour, J. Mérot, C. Prignet, J.-P. Rozet, M. Trassinelli, D. Vernhet, and S. J. d. Carmo, *Experiment with highly charged ions at the paris ecr ion source, SIMPA*, in ECRIS 2008, 18th International Workshop on ECR Ion Sources, Chicago, 2008, pp. MOCO–C02.

[D4] R. Reuschl, D. Banas, H. F. Beyer, A. Gumberidze, S. Hess, P. Indelicato, D. Liesen, D. Protic, U. Spillmann, T. Stohlker, M. Trassinelli, S. Trotsenko, and G. Weber, *Experimental developments for the lamb-shift investigation in heavy ions*, in 20th International Conference on Application of Accelerators in Research and Industry, (F. D. McDaniel and B. L. Doyle, eds.), AIP CONFERENCE PROCEEDINGS, AIP, Ft Worth, TX, 2008, pp. 168–171 (ISI Document Delivery No.: BJH43 Times Cited: 0 Cited Reference Count: 8 Reuschl, Regina Banas, Dariusz Beyer, Heinrich F. Gumberidze, Alexandre Hess, Sebastian Indelicato, Paul Liesen, Dieter Protic, Davor Spillmann, Uwe Stoehlker, Thomas Trassinelli, Martino Trotsenko, Sergiy Weber, Guenter).

[D5] D. Gotta, F. Amaro, D. F. Anagnostopoulos, S. Biri, D. S. Covita, H. Gorke, A. Gruber, M. Hennebach, A. Hirtl, T. Ishiwatari, P. Indelicato, T. Jensen, E. O. Le Bigot, J. Marton, M. Nekipelov, J. M. F. dos Santos, S. Schlesser, P. Schmid, L. M. Simons, T. Strauch, M. Trassinelli,

J. F. C. A. Veloso, and J. Zmeskal, *Conclusions from recent pionic-atom experiments*, AIP Conf.Proc. **1037** (2008), 162–177.

[D6] H. Brauning, S. Hess, S. Geyer, U. Spillmann, C. Kozhuharov, T. Krings, A. Kumar, R. Martin, D. Protic, R. Reuschl, M. Trassinelli, S. Trotsenko, G. Weber, D. Winters, and T. Stohlker, *Polarization measurements of radiative electron capture transitions in highly charged ions*, in 20th International Conference on Application of Accelerators in Research and Industry, (F. D. McDaniel and B. L. Doyle, eds.), Vol. 1099 of *AIP CONFERENCE PROCEEDINGS*, AIP, Ft Worth, TX, 2008, pp. 117–120 (ISI Document Delivery No.: BJH43 Times Cited: 0 Cited Reference Count: 14 Braeuning, H. Hess, S. Geyer, S. Spillmann, U. Kozhuharov, Ch. Krings, Th. Kumar, A. Maertin, R. Protic, D. Reuschl, R. Trassinelli, M. Trotsenko, S. Weber, G. Winters, D. Stoehlker, Th.).

[D7] M. Trassinelli and P. Indelicato, *Hyperfine structure in pionic atoms: relativistic calculation*, in EXA 2005, International Conference on Exotic Atoms, Austrian Accademy of Science Press, Vienna, Austria, 2005, pp. 221–225 (Selected poster contribution).

[D8] M. Trassinelli, S. Biri, S. Boucard, D. S. Covita, D. Gotta, B. Leoni, A. Hirtl, P. Indelicato, E. O. Le Bigot, J. M. F. dos Santos, L. M. Simons, L. Stingelin, J. F. C. A. Veloso, A. Wasser, and J. Zmeskal, *High resolution he-like argon and sulfur spectra from the psi ecrit*, AIP Conf. Proc. **749** (2005), 81–84.

[D9] M. Trassinelli, *Characterization of a ccd detector for exotic atom bragg crystal spectroscopy*, in EXA 2005, International Conference on Exotic Atoms, Austrian Accademy of Science Press, Vienna, Austria, 2005, pp. 343–347 (Selected poster contribution).

[D10] P. Indelicato and M. Trassinelli, *From heavy ions to exotic atoms*, in Topics in Heavy Ion Physics: Memorial Symposium for Gerhard Soff, (J. Reinhardt and W. Greiner, eds.), EP Systema, Budapest, 2005, pp. 55–65.

[D11] D. F. Anagnostopoulos, D. S. Covita, H. Fuhrman, D. Gotta, A. Gruber, A. Hirtl, M. Hennebach, P. Indelicato, T. Jensen, T. Ishiwatari, E. L. Bigot, M. Nekipelov, J. Marton, J. M. F. d. Santos, P. Schmid, L. M. Simons, M. Trassinelli, J. F. C. A. Veloso, and J. Zmeskal, *Precision determination of the strong interaction shift and width in pionic hydrogen*, in EXA 2005, International Conference on Exotic Atoms, Austrian Accademy of Science Press, Vienna, Austria, 2005.

[D12] M. Trassinelli, P. Indelicato, T. Jensen, B. Manil, D. F. Anagnostopoulos, H. Fuhrman, A. Gruber, A. Hirtl, J. Zmeskal, A. Blechmann, G. Borchert, D. Gotta, M. Hennebach, A. Dax, Y. W. Liu, V. E. Markushin, L. M. Simons, N. Nelms, and A. Wells, *Precision spectroscopy of pionic atoms: from pion mass evaluation to tests of chiral perturbation theory.*, in DAΦNE 2004: Physics at meson factories, (F. Anulli, M. Bertani, G. Capon, C. Curceanu-Petrascu, F. L. Fabbri, and S. Miscetti, eds.), Vol. 36, Frascati Physics Series, Frascati, Italy, 2004, pp. 343–348.

[D13] D. F. Anagnostopoulos, S. Biri, H. Fuhrman, D. Gotta, M. Giersch, A. Gruber, A. Hirtl, M. Hennebach, P. Indelicato, T.-W. Liu, B. Manil, V. M. Markushin, N. Nelms, L. M. Simons, P. A. Schmelzbach, M. Trassinelli, and J. Zmeskal, *Precision spectroscopy of pionic hydrogen*, in EXA 2002, International Workshop on Exotic Atoms, Austrian Accademy of Science Press, Vienna, Austria, 2002.

[D14] J. M. Hickmann, C. McCormick, M. Trassinelli, and R. Y. Chiao, *Forward four-wave mixing mediated by a kerr nonlinearity*, in Coherence and Quantum Optics VIII, Proceedings of the Eighth Rochester Conference on Coherence and Quantum Optics, held at the University of Rochester, June 13–16, 2001, Springer US, 2001, pp. 553–554 (Proceedings of the Eighth Rochester Conference on Coherence and Quantum Optics, held at the University of Rochester, June 13–16, 2001).

Patents and codes

Patents

[E1] M. Trassinelli, S. Cervera, D. Vernhet, M. Marangolo, and V. Garcia *Procédé d'obtention d'un matériau à effet magnétocalorique géant par irradiation d'ions*, Patent FR 1753170 (2017), US 20200126697.

Programs

[F1] *Minuit_fit (version 1.5)* Data analysis package based on the minimization of the chi2 to determine, for given data and model function, the best set of parameters and their correspondent uncertainties. Based on the classic CERN library Minuit with a user customizable and friendly interface and with a library of functions and different chi-square types. Written in Fortran90 with some Python complementary routines. Users: members of the ASUR team at the INSP and some members of the Atomic Physics group of GSI, 2007–pres.

[F2] *Nested_fit (version 4.5.6)* Data analysis package based on the Bayesian statistics. In addition to provide outputs similar to standard minimization programs (chi-square, best parameter, uncertainties, etc.), it determines the complete probability distribution for each parameter and the Bayesian evidence, a quantity required to compare different models. The evidence calculation is based on the nested algorithm presented in the literature (nested sampling). Written in Fortran90 with some Python complementary routines. Users: INSP members, metrology group at the LKB, University of Lisbon, . . . , 2014–pres. (`https://github.com/martinit18/nested_fit`).

Conferences and seminars

Below are reported all the contribution personally presented by myself. In the last section of this chapter, the list of contributions from other authors of the work I directed are presented.

Invited oral contributions at conferences

[G1] *Detection of surface magnetism with hollow atoms*, **21st International Highly Charged Ions Conference**, 2 - 6 Sept. 2024, Egmond aan Zee, The Netherlands.

[G2] *Testing quantum electrodynamics in extreme fields using helium-like uranium*, **International Conference on Precision Physics of Simple Atomic Systems PSAS'2024**, 10 - 14 July 2024, Garching, Germany.

[G3] *Sample surface magnetism detected with highly charged ions*, **24th International Workshop on Inelastic Ion-Surface Collisions**, 10 - 15 Sept. 2023, Charleston, USA.

[G4] *Testing quantum electrodynamics in the simplest and heaviest multi-electronic atoms*, **DPG Spring Meeting** , 5-10 March 2023, Cologne, Germany.

[G5] *Light pionic and muonic atoms: investigation of hadron physics at low energy and atomic physics in exotic bound systems*, **Precision Physics, Quantum Electrodynamics and Foudamental Interactions**, 30 April - 5 Mai 2017, Cargèse, France.

[G6] *Measurement of the pion mass from X-ray spectroscopy of exotic atoms*, **14th International Workshop on Meson Production, Properties and Interaction**, 2-7 June 2016, Krakow, Poland.

[G7] *Symmetric heavy collision systems at low energy investigated by high resolution X-ray spectroscopy*, **23rd International Symposium on Ion Atom Collisions**, 19-22 July 2013, Beijing, China.

[G8] *Accurate Spectroscopy of Excited Levels in He-like Uranium*, **International Conference on the Physics of Highly Charged Ions**, 30 August - 3 September 2010, Shanghai, China.

[G9] *Correlations and Quantum Electrodynamics effects in He-like uranium*, **DPG Spring Meeting**, 10-14 March 2008, Darmstadt, Germany.

Selected oral contributions at conferences

(Conferences and workshops with international selecting committee)

[H1] *Weighted average of inconsistent data: a Bayesian approach*, **43rd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 1 - 5 July 2024, Ghent, Belgium.

[H2] *A unique probability function for quantum and classical phenomena where distributivity is violated*, **The 20th European Conference on Foundations of Physics**, 28 - 30 October 2021, Paris, France.

[H3] *Conditional Probability, Quantum Time and Friends*, **40th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 4 - 9 July 2021, Online conference.

[H4] *Tuning disorder in a first-order magnetoelastic transition*, **64th Annual Conference on Magnetism and Magnetic Materials**, 4 - 8 November 2019, Las Vegas, United States.

[H5] *Bayesian data analysis of atomic spectra*, **XXXIst International Conference on Photonic, Electronic and Atomic Collisions**, 24 - 30 July 2019, Deauville, France.

[H6] *A unique probability function for quantum and classical phenomena where distributivity is violated*, **39th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 30 June - 5 July 2019, Garching, Germany.

[H7] *Optimisation of giant magnetocaloric materials with ion irradiation*, **10th International Symposium on Swift Heavy Ions in Matter & 28th International Conference on Atomic Collisions in Solids**, 1-6 July 2018, Caen, France.

[H8] *HCI collisions to suppress the thermal hysteresis in magnetocaloric thin films*, **18th International Conference on the Physics of Highly Charged Ions**, 11-16 September 2016, Kielce, Poland.

[H9] *Suppression of the Thermal Hysteresis in Magnetocaloric Materials by Highly Charged Ion Bombardment*, **MMM Intermag 2016 Joint Conference**, 11-15 January 2016, San Diego, United States.

[H10] *Highly charged ions impact, a promising route to exploit the refrigeration power of giant magnetocaloric thin films*, **21th International Workshop on Inelastic Ion-Surface Collisions**, 18 - 23 October 2015, Donostia–San Sebastián, Spain.

[H11] *Slow highly charged ion colliding with atoms, clusters and solid*, **26th International Conference on Atomic Collisions in Solids**, 13-18 July 2014 2014, Debrecen, Hungary.

[H12] *Contribution of multiple capture processes in slow collisions of highly charged ions with a many electrons target*, **46th Conference of the European Group on Atomic Systems**, 1-4 July 2014 2014, Lille, France.

[H13] *Investigation of (quasi) symmetric slow collisions between highly charged ions and free atoms*, **16th International Conference on the Physics of Highly Charged Ions**, 2-7 September 2012, Heidelberg, Germany.

[H14] *Investigation of (quasi) symmetric slow collisions between highly charged ions and free atoms*, **44th Conference of the European Group on Atomic Systems**, 9-13 July 2012, Gothenburg, Sweden.

[H15] *Magnetic properties changes of MnAs thin films irradiated with highly charged ions* **19th International Workshop on Inelastic Ion-Surface Collisions**, 16-21 September 2012, Frauenchiemsee , Germany.

[H16] *Determining clustering properties through the selectivity of collision dynamics*, **XXVII International Conference on Photonic, Electronic and Atomic Collisions**, 27 July - 2 August 2011, Belfast, Northern Ireland, UK (**selected topic**).

[H17] *Measurement of the Lamb shift in hydrogen-like lead using crystal spectroscopy methods*, **European Group on Atomic Systems Conference (EGAS 38)**, June 7-10 2006, Ischia, Italy.

[H18] *Precision spectroscopy of pionic atoms: from pion mass evaluation to tests of chiral perturbation theory*, **4th DAΦNE 2004: Physics at meson factories**, June 7-11 2004, Frascati, Italy.

[H19] *High Resolution He-like Argon and Sulfur Spectra from the PSI ECRIT*, **Electron Cyclotron Resonance Ion Sources: 16th International Workshop on ECR Ion Sources ECRIS'04**, September 26-30 2004, Berkeley, California (USA).

Invited oral contributions at workshops

[I1] *New Stringent Test of Bound-State QED: High-Resolution Measurement of an Intra-Shell Transition in He-like Uranium*, **19th SPARC Topical Workshop**, 6 - 9 Sept. 2022, Jena, Germany (hybrid).

[I2] *Ion Structure and Ion-Ion Collisions with storage rings*, **EMMI half-day** 2 February, 2022, Darmstadt, GSI (hybrid).

[I3] *High Precision Tests of Strong-Field QED in He-like Uranium* , **17th SPARC Topical Workshop**, 14-16 September 2020, Online conference.

[I4] *Test of Quantum Electrodynamics in strong electric field at FAIR phase-0*, **NUSTAR Week 2019**, 23-27 September 2019, Gif-sur-Yvette, France.

[I5] *High Precision Tests of Strong-Field QED in He-like Uranium*, **16th SPARC Topical Workshop**, 9-13 September 2019, Jena, Germany.

[I6] *The FOCAL future for an accuracy better than 1eV*, **EMMI Rapid Reaction Task Force: 1s Lamb shift in heavy H-like ions: towards an accuracy of < 1 eV**, 17-19 September 2018, Jena, Germany.

[I7] *The FOCAL Experiment: 1s Lamb Shift in H-like Au*, **EMMI Rapid Reaction Task Force: 1s Lamb shift in heavy H-like ions: towards an accuracy of < 1 eV**, 17-19 September 2018, Jena, Germany.

[I8] *Bayesian data analysis tools for atomic physics*, **SPARC Topical Workshop**, 7-11 September 2018, Lisbon, Portugal.

[I9] *Quantum Electrodynamics tests from X-ray spectroscopy of highly charged ions*, **Symposium on "Precision Physics Experiments with Stored Highly Charged Ions at Low Energie"**, 12-16 August 2018, Lanzhou, China.

[I10] *Highly charged ions impact, a promising route to exploit the refrigeration power of giant magnetocaloric thin film*, **Mate Workshop**, 2 February 2018, Paris, France.

[I11] *Highly charged ions impact, a promising route to exploit the refrigeration power of giant magnetocaloric thin films*, **NanoAndes Workshop**, 30 Nov. - 1 Dec. 2017, Buenos Aires, Argentina.

[I12] *High-resolution differential Measurements Between Two-and Three-Electron Uranium Ions for High-Precision Tests of Strong-Field QED*, **14th SPARC Topical Workshop**, 11-14 September 2017, Caen, France.

[I13] *High-accuracy low-energy X-ray spectroscopy at CRYRING*, **Research with CRYRING@ESR**, 24-25 April 2017, Darmstadt, Germany.

[I14] *Quantum Electrodynamics tests in strong field with heavy ions*, **Journées FAIR-France**, 17-18 Mai 2017, Orsay, France.

[I15] *Highly charged ions impact, a promising route to exploit the refrigeration power of giant magnetocaloric thin films*, **Journéees annuelles de la SF2M**, 26 - 28 October 2015, Paris, France.

[I16] *Images MFM de couches minces d'arséniure de manganèse irradié par des ions multichargés*, **Microscopie en champ proche à l'INSP**, 3 December 2015, Paris, France.

[I17] *Highly charges ions impact, a promising route to exploit the refrigeration power of giant magnetocaloric thin films*,**11th Topical Workshop of the SPARC collaboration**, 22-27 September 2015, Fodele, Greece.

[I18] *High-accuracy X-ray spectroscopy: a unique tool for studying atomic structure and dynamical processes in high Coulomb fields*, **X-ray Physics Workshop**, 24-26 February 2014, Jena, Germany.

[I19] *Astrophysics in lab via slow highly charged ion collisions with multi-electron targets*, **EMMI Physics Days 2013**, 18-19 November 2013, Darmstadt, Germany.

[I20] $n = 2 \rightarrow 2$ *transitions in highly charged two-electron ions.* **10th Topical Workshop of the SPARC collaboration**. 28-29 October 2013, Jena, Germany.

[I21] $n = 2 \rightarrow 2$ *transitions in highly charged two-electron ions*, **Mini workshop: Wavelength standards in the x-ray region Helmholtz-Institut Jena**, 19 April 2013, Jena, Germany.

[I22] *Experiments at the SIMPA ECR ion source in Paris: ion collisions*, **Micro-calorimeters applied for precision x-ray experiments: x-ray spectroscopy towards FAIR**, 31 January 2013, Jena, Germany.

[I23] *Interaction of slow HCI with gaseous targets: absolute x-ray emission cross sections and contribution of multi-capture processes*, **8th International Topical SPARC Workshop**, 5-10 September 2011, Moscow, Russia.

[I24] *Accurate Spectroscopy of Excited Levels in He-like Uranium*, **Physics Prospects at the ESR and HITRAP, EMMI Institute Workshop**, June 27-30 2010, Eisenach, Germany.

[I25] *Accurate Spectroscopy of Excited Levels in He-like Uranium*, **26th Wilhelm and Else Heraeus Seminar, Atomic Theory for Fundamental Interactions and Simple Systems in Strong Fields**, January 18-21 2009, Bad Honnef, Germany.

[I26] *Accurate Spectroscopy of Excited Levels in He-like Uranium*, **5th SPARC Workshop**, September 23-28 2008, Predeal, Romania.

[I27] *Low X-ray spectroscopy of highly charged ions*, **Topical Workshop of the SPARC Collaboration: Novel Research Opportunities for Atomic Physics with Heavy Ions: Facilities and Instrumentation**, February 12-15 2007, Paris, France.

[I28] *Atomic Physics with Highly Charged Ions at Storage Rings*, **XXXVIII. Arbeitstreffen Kernphysik**, February 22 - March 1 2007. Schleching.

[I29] *X-ray spectroscopy at HITRAP*, **HITRAP and Cave-A Topic workshop**, November 20-21 2006, Darmstadt, Germany.

[I30] *X-ray spectroscopy with HCI's at MAXEBIS and HITRAP*, **Workshop on "Charge breeding and related topic"**, May 22-24, 2006 Darmstadt, Germany.

Invited seminars

[L1] *Testing quantum electrodynamics in the simplest and heaviest multi-electronic atoms*, **Laboratoire Kastler Brossel seminar**, 1 March 2023, Paris, France.

[L2] *Light pionic and muonic atoms: investigation of hadron physics at low energy and atomic physics in exotic bound systems*, **Institute of Modern Physics seminar**, 29 August 2018, Lanzhou, Paris.

[L3] *One deep breath to go 200 m deep in the sea: the physics of freedivers* , **Scuola Galileiana seminar**, 19 April 2018, Padova, Italy.

[L4] *Bayesian data analysis tools for physics*, **CELIA laboratory seminar**, 31 January 2018, Bordeaux, France.

[L5] *Bayesian data analysis tools for physics*, **Colloquium of Physics and Astronomy department, University of Exeter**, 15 December 2017, Exeter, United Kingdom.

[L6] *One deep breath to go 200 m deep in the sea: the physics of freedivers*, **IFIR seminar**, 24 November 2017, Rosario, Argentina.

[L7] *Study of quantum electrodynamics and chromodynamics in atomic bound systems*, **Colloquium INFN Firenze**, 8 November 2017, Firenze, Italy.

[L8] *Study of quantum electrodynamics and chromodynamics in atomic bound systems*, **Hunt for the Impossible atoms seminar, founded by the John Templeton Foundation**, 7 November 2017, Frascati, Italy.

[L9] *Un gros souffle pour aller à 200 m de profondeur : la physique de la plongée en apnée*, **Séminaire générale de l'Institut des NanoSciences de Paris**, 29 June 2017, Paris, France.

[L10] *Un gros souffle pour aller à 200 m de profondeur : la physique de la plongée en apnée*, **Séminaires de la Licence de Physique, Université Pierre et Marie Curie**, 31 January 2017, Paris, France

[L11] *One deep breath to go 200 m deep in the sea: the physics of freedivers*, **Maxwell lectures, King's College London**, November 2016, London, United Kingdom.

[L12] *Light pionic and muonic atoms: investigation of hadron physics at low energy and atomic physics in exotic bound systems*, 26 September 2012, **Helmholtz Institute Jena, Jena**, Germany.

[L13] *Quantum Electrodynamics Tests and X-rays Standards using Pionic Atoms and Highly Charged Ions* 26 June 2006, **Gesellschaft für Schwerionenforschung**, Darmstadt, Germany

[L14] *Tests d'Électrodynamique Quantique et étalons de Rayons-X à l'Aide des Atomes Pioniques et des Ions Multichargés*, 9 January 2006, **Institut des NanoSciences de Paris**, Paris, France.

Posters

[N1] *Weighted average of scattered data: a Bayesian approach*, **21st International Highly Charged Ions Conference**, 2 - 6 Sept. 2024, Egmond aan Zee, The Netherlands.

[N2] *Weighted average of scattered data: a Bayesian approach*, **International Conference on Precision Physics of Simple Atomic Systems PSAS'2024**, 10 - 14 July 2024, Garching, Germany.

[N3] *Bayesian model selection for high-accuracy x-ray spectroscopy*, **42nd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 3 - 7 July 2023, Garching, Germany.

[N4] *Shape and satellite studies of HCI high-accuracy X-ray spectra by Bayesian methods*, **19th SPARC Topical Workshop**, 6 - 9 Sept. 2022, Jena, Germany (hybrid).

[N5] *Testing QED in heliumlike high-Z ions, a Bayesian approach*, **20th International Conference on the Physics of Highly Charged Ions**, 29 Aug. - 3 Sept. 2022, Matsue, Japan (hybrid).

[N6] *Shape and satellite studies of HCI high-accuracy X-ray spectra by Bayesian methods*, **20th International Conference on the Physics of Highly Charged Ions**, 29 Aug. - 3 Sept. 2022, Matsue, Japan (hybrid).

[N7] *New stringent test of bound-state QED: high-resolution measurement of an intra-shell transition in He-like uranium*, **52nd Conference of the European Group on Atomic Systems**, 6 - 8 July 2021, Online conference, Zagreb.

[N8] *Ion irradiation to introduce controlled disorder in giant magnetocaloric materials*, **XXXIst International Conference on Photonic, Electronic and Atomic Collisions**, 24 - 30 July 2019, Deauville, France.

[N9] *Nested sampling for atomic physics data: the nested fit program*, **39th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 30 June - 5 July 2019, Garching, Germany.

[N10] *Ion irradiation for tailoring giant magnetocaloric materials properties*, **13th European Conference on Atoms Molecules and Photons**, 8-12 April 2019, Florence, Italy.

[N11] *High-resolution Wavelength-dispersive Spectroscopy of K-shell Transitions in Hydrogen-like Gold*, **13th European Conference on Atoms Molecules and Photons**, 8-12 April 2019, Florence, Italy.

[N12] *Optimization of giant magnetocaloric materials with ion irradiation* , **19th International Conference Physics of Highly Charged Ions**, 3-7 September 2018, Lisbon, Portugal.

[N13] *Measurement of the pion mass from X-ray spectroscopy of exotic atoms*, **19th International Conference Physics of Highly Charged Ions**, 3-7 September 2018, Lisbon, Portugal.

[N14] *Quantum mechanics from two postulates*, **Foundations of quantum mechanics and their impact on contemporary society**, 11-12 December 2017, London, United Kingdom.

[N15] *Caractérisation à l'échelle sub-micrométrique des modifications induites par impact d'ions lourds dans les matériaux à effet magnétocalorique géant*, **18ème Colloque Louis Néel**, 24-27 September 2017, Paris, France.

[N16] *Bayesian Statistics for Atomic Physics*, **18th International Conference on the Physics of Highly Charged Ions**, 11-16 September 2016, Kielce, Poland.

[N17] *Measurement of the pion mass from X-ray spectroscopy of exotic atoms*, **12th European Conference on Atoms Molecules and Photons**, 5-9 September 2016, Frankfurt, Germany.

[N18] *Bayesian Statistics for Atomic Physics*, **12th European Conference on Atoms Molecules and Photons**, 5-9 September 2016, Frankfurt, Germany.

[N19] *Impacts d'ions lents multichargés, une voie prometteuse pour les matériaux à effet magnétocalorique géant*, **17ème Colloque Louis Néel**, 27 March - 1 Avril 2016, Saint-Dié-des-Vosges, France.

[N20] *Highly charged ions interaction to modify proprieties of giant magnetocaloric thin films*, **Swift Heavy Ions in Matters**, 18-21 May 2015, Darmstadt, Germany.

[N21] *Taking advantages of highly charged ions interaction to tune modifications in giant magnetocaloric material*, **26th International Conference on Atomic Collisions in Solids**, 13-18 July 2014 2014, Debrecen, Hungary.

[N22] *Collisions dynamics of electrons, photons, and highly-charged ions with clusters to probe the clustering process in a pulsed supersonic jet* , **46th Conference of the European Group on Atomic Systems**, 1-4 July 2014 2014, Lille, France.

[N23] *Modifications of the magnetic properties of MnAs thin films under impact of slow highly charged ions*, **XXVIII International Conference on Photonic, Electronic and Atomic Collisions**, 24-30 July 2013, Lanzhou, China.

[N24] *Determining clustering properties through the selectivity of collision dynamics*, **XXVII International Conference on Photonic, Electronic and Atomic Collisions**, 27 July - 2 August 2011, Belfast, Northern Ireland, UK.

[N25] *Interaction of slow HCI with gaseous targets: absolute x-ray emission cross sections and contribution of multi-capture processes*, **XXVII International Conference on Photonic, Electronic and Atomic Collisions**, 27 July - 2 August 2011, Belfast, Northern Ireland, UK.

[N26] *Temporal Evolution of Clustering Rate in a Pulsed Supersonic Jet*, **International Conference on the Physics of Highly Charged Ions**, August 30 - September 3 2010, Shanghai, China.

[N27] *Collisions of Ar^{17+} ions with gaseous and solid targets at a few tens of keV/q probed by X-ray spectroscopy*, **XXVI International Conference on Photonics, Electronics and Atomic Collisions**, July 22-28, 2009, Kalamazoo, MI, USA.

[N28] *The Fast Ion Slow Ion Collision project for atomic physics*, **SPIRAL2 Week 2009**, January, 26-29 2009, Caen, France.

[N29] *Accurate Spectroscopy of Excited Levels in He-like Uranium*, **International Conference on the Physics of Highly Charged Ions**, September 1-5, 2008, Tokyo, Japan.

[N30] *Correlations and Quantum Electrodynamics effects in He-like uranium*, **International Conference on X-ray and Inner-Shell Processes**, June 22-27 2008, Paris, France.

[N31] *Development of an X-ray Bragg Spectrometer for Intrashell Transitions in High-Z Few Electron Ions*, **XXV International Conference on Photonic, Electronic and Atomic Collisions**, July 25-31 2007, Freiburg, Germany.

[N32] *He-like Argon, Chlorine and Sulfur Spectra Measurement from an Electron Cyclotron Resonance Ion Trap*, **The 13th International conference on the Physics of Highly Charged Ions (HCI 06)**, August 28 - September 1 2006, Belfast, United Kingdom.

[N33] *High accuracy crystal spectroscopy of the n = 2 energy level of helium-like uranium*, **International Workshop on Precision Physics of Simple Atomic Systems (PSAS 2006)**, June 12-16, 2006 Venice, Italy.

[N34] *Measurement of the Lamb shift of n = 2 exited states in helium-like uranium using crystal spectroscopy methods*, **European Group on Atomic Systems Conference (EGAS 38)**, June 7-10 2006, Ischia, Italy.

[N35] *Hyperfine structure, recoil and self-energy corrections in pionic hydrogen*, **QED, Quantum Vacuum and the Search for New Forces**, June 5-9 2005, Les Houches, France.

[N36] *Hyperfine structure in pionic atoms: relativistic calculation*, **EXA 2005, International Conference on Exotic Atoms**, February 21-25 2005, Vienna, Austria.

[N37] *Characterization of a CCD detector for exotic atom Bragg crystal spectroscopy*, **EXA 2005, International Conference on Exotic Atoms**, February 21-25 2005, Vienna, Austria.

[N38] *Pionic and highly charged atoms X ray spectroscopy*, **Study Week on Trapping and Manipulating Atomic and Subatomic Particles**, June 2-6 2003, Leuven, Belgium.

Contribution from other authors on projects I direct

He-like uranium spectroscopy

[Oa1] **Invited talk presented by A. Gumberidze**
Precision spectroscopy of intra-shell transition in He-like uranium: status and future perspectives, **20th SPARC Topical Workshop**, 5 - 7 Sept. 2023, Edimbourg, United Kingdom.

[Oa2] **Invited talk presented by R. Lötzsch**
New stringent test of bound-state QED: high-resolution measurement of an intra-shell transition in He-like uranium, **XXXIII International Conference on Photonic, Electronic, and Atomic Collisions**, 25 July - 1 Aug. 2023.

[Oa3] **Selected talk presented by R. Loetzsch**
High resolution measurement of the 2p3/2→2s1/2 intra-shell transition in He- like uranium, **20th International Conference on the Physics of Highly Charged Ions**, 29 Aug. - 3 Sept. 2022, Matsue, Japan (hybrid).

[Oa4] **Selected talk presented by L. Duval**
Testing QED with spectroscopy of Highly charged ions from medium Z to high Z, **FAIRness 2022**, 23 - 27 May 2022, Pieria, Greece.

[Oa5] **Seminar presented by R. Lötzsch**
New stingent test of bound-system QED from high-resolution measurement of He-like uranium intrashell transitions, **Seminar of the Institute of Optics and Quantumelectronics**, 12 November 2021, Friedrich-Schiller-University Jena.

[Oa6] **Seminar presented by R. Lötzsch**
New stingent test of bound-system QED from high-resolution measurement of He-like uranium intrashell transitions, **Seminar of the Atomic Physics Group of GSI**, 3 November 2021, Online conference.

[Oa7] **Talk presented by R. Lötzsch**
New stingent test of bound-system QED from high-resolution measurement of He-like uranium intrashell transitions, **Annual meeting of the Helmholtz Institute Jena**, 6 October 2021, Online conference.

[Oa8] **Invited talk presented by R. Lötzsch**
FAIR Phase-0: X-ray spectroscopy experiments, **18th SPARC Topical Workshop**, 6 - 9 September 2021, Online conference.

[Oa9] **Poster presented by R. Lötzsch**
New stringent test of bound-state QED: high-resolution measurement of an intra-shell transition in He-like uranium, **32nd International Conference on Photonic, Electronic and Atomic Collisions**, 20 - 23 July 2021, Online conference.

Ion irradiation of giant magnetiocaloric materials

[Ob1] **Poster presented by S. Cervera**
Modification des propriétés des couches minces de matériaux à effet magnétocaloriques géant par irradiation d'ions lourds , **18ème Colloque Louis Néel**, 24-27 September 2017, Paris, France.

[Ob2] **Poster presented by M. Lo Bue**
Modification of the Thermal Hysteresis in Magnetocaloric Materials by Highly Charged Ion Bombardment, **7th International Conference on Magnetic Refrigeration at Room Temperature**, 11-14 September 2016, Torino, Italy.

[Ob3] **Selected talk presented by S. Cervera**
Les mécanismes responsables de la suppression de l'hystérésis thermique des matériaux magnétocaloriques par implantation d'ions multichargés, **Colloque Louis Néel**, 29 March - 1 April 2016, Saint-Dié-des-Vosges, France.

[Ob4] **Selected talk presented by M. Marangolo**
Modification of the Thermal Hysteresis in Magnetocaloric Materials by Highly Charged Ion Bombardment, **Joint European Magnetic Symposia**, 21-26 Aug. 2016, Glascow, United Kingdom.

[Ob5] **Poster presented by S. Cervera**
Impacts of highly charged ions as seeds in a magneto-structural phase transition of magnetocaloric thin films, **XXIX International Conference on Photonic, Electronic and Atomic Collision**, 22-28 July 2015, Toledo, Spain.

[Ob6] **Selected talk presented by S. Cervera**
Impacts of highly charged ions as seeds in a magneto-structural phase transition of magnetocaloric thin films, **XXIX International Conference on Photonic, Electronic and Atomic Collision**, 22-28 July 2015, Toledo, Spain.

[Ob7] **Invited seminar presented by D. Vernhet**
Tuning the magnetic properties of surfaces/thin films by highly charged ion impact, **Seminar at the university of Rosario**, 10 September 2014, Rosario, Argentina.

[Ob8] **Selected talk presented by C. Prigent**
Taking advantages of highly charged ions interaction to tune modifications in giant magnetocaloric material, **17th International Conference on the Physics of Highly Charged Ions**, 31 August - 5 September 2014, Bariloche, Argentina.

Bayesian data analysis

[Oc1] **Selected talk presented by L. Maillard**
Nested Sampling for exploring Lennard-Jones clusters, **43rd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 1 - 5 July 2024, Ghent, Belgium.

[Oc2] **Poster presented by D. Simonot**
Bayesian statistics for multimodal problems applied to emission spectra broadening of a single core/shell CdSe/CdS nanocrystal, **2023 Conference on Lasers and Electro-Optics Europe & European Quantum Electronics Conference**, 26 - 30 June 2023, Munich.

[Oc3] **Poster presented by J. Machado**
Tests of bound state quantum electrodynamics in 2-electron medium-Z systems, **20th SPARC Topical Workshop**, 5 - 7 Sept. 2023, Edimbourg, United Kingdom.

[Oc4] **Selected talk presented by C.A. Godinho**
Strong Field QED Analysis With Bayesian Model Selection for He-Like Ions, **XVII Iberian Joint Meeting on Atomic and Molecular Physics**, 5 - 8 Sept. 2023, Coimbra, Portugal.

[Oc5] **Selected talk presented by L. Duval**
Study of B-like ions x-ray emission spectra in an electron-cyclotron resonance ion source plasma, **20th SPARC Topical Workshop**, 5 - 7 Sept. 2023, Edimbourg, United Kingdom.

[Oc6] **Selected talk presented by L. Duval**
Study of B-like ions X-ray Emission Spectra in an Electron-Cyclotron Resonance Ion Source plasma, **The 14th international colloquium on atomic spectra and oscillator strengths for astrophysical and laboratory plasmas**, 10 - 14 July 2023, Paris, France.

[Oc7] **Selected talk presented by L. Duval**
Study of B-like ions X-ray Emission Spectra in an Electron-Cyclotron Resonance Ion Source plasma, **42nd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 3 - 7 July 2023, Garching, Germany.

[Oc8] **Selected talk presented by C.A. Godinho**
Bayesian Analysis of Strong Field QED Tests for He-Like Ions Using the Nested Sampling Algorithm, **42nd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 3 - 7 July 2023, Garching, Germany.

[Oc9] **Poster presented by L. Maillard**
Nested sampling for the exploration of potential energy surfaces, **42nd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 3 - 7 July 2023, Garching, Germany.

[Oc10] **Poster presented by L. González Miret**
Study of the relevance of the nuclear three-body interaction in 0f7/2-shell nuclei via Bayesian statistical, **41st International Conference on Bayesian and Maximum Entropy methods in Science and Engineering**, 18 - 22 July 2022, Paris, France.

[Oc11] **Selected talk presented by L. Maillard**
Nested sampling for the exploration of potential energy surfaces, **41st International Conference on Bayesian and Maximum Entropy methods in Science and Engineering**, 18 - 22 July 2022, Paris, France.

[Oc12] **Selected talk presented by L. Maillard**
Nested fit: developments and tests, **1ère journée GDR Intelligence Artificielle en Sciences des Matériaux**, 30 May - 1 June 2022, Paris, France.

[Oc13] **Poster presented by L. Maillard**
Clustering Methods for Exploration of Potential Energy Surfaces, **40th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 4 - 9 July 2021, Online conferenece.

[Oc14] **Poster presented by L. González Miret**
Bayesian-assisted strategies to Landau-like effective Hamiltonians, **40th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering**, 4 - 9 July 2021, Online conferenece.

Ion – magnetic surface collisions

[Od1] **Poster presented by V. Ahmad**
Development of a High-Resolution X-ray Spectrometer with a Hybrid Pixel Detector for probing the Dynamics of Ion–Magnetised Surface Interactions, **21st International Highly Charged Ions Conference**, 2 - 6 Sept. 2024, Egmond aan Zee, The Netherlands.

[Od2] **Poster presented by E. Lamour**
Detecting sample surface magnetism with highly charged ions, **XXXIII International Conference on Photonic, Electronic, and Atomic Collisions**, 25 July - 1 Aug. 2023, Ottawa, Canada.

[Od3] **Poster presented by P. Dergham**
Probing surface magnetism with highly charged ions, **20th International Conference on the Physics of Highly Charged Ions**, 29 Aug. - 3 Sept. 2022, Matsue, Japan (hybrid).

[Od4] **Selected talk presented by P. Dergham**
Probing surface magnetism with highly charged ions by X- ray spectroscopy, **29th international conference on atomic collisions in solids & 11th international symposium on swift heavy ions in matter**, 19 - 24 June 2022, Helsinki, Finland.

[Od5] **Poster presented by P. Dergham**
Probing surface magnetism with highly charged ions by X-ray spectroscopy, **32nd International Conference on Photonic, Electronic and Atomic Collisions**, 20 - 23 July 2021, Online conference.

[Od6] **Poster presented by M. Werl**
Using highly charged ions to probe the magnetic structure of 2D materials, **EUROMAT 2021, European Congress and Exhibition On Advanced Materials And Processes**, 13-17 September 2021, Online conference.