

## Publications

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## Chapters in Books

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- [84] L.U. Ancarani, G. Gasaneo, and D. Mitnik, “On the applicability of the Exterior Complex Scaling method for scattering problems including Coulombic potentials”, Invited talk presented at the 64<sup>th</sup> Annual Gaseous Electronics Conference, Austin, Texas, USA (October 2011).
- [85] L.U. Ancarani, G. Gasaneo, and D.M. Mitnik, “Three–body break–up model problem in hyperspherical coordinates: analytical and numerical solution”, Invited talk presented at the French National Conference PAMO–JSM, Metz, France (July 2012).
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- [91] M.J. Ambrosio, A.I. Gómez, F.D. Colavecchia, D.M. Mitnik, and G. Gasaneo, “Estudio de los canales presentes en una función de tres cuerpos calculada por el método de Sturmians Generalizados”, Poster paper presented at the VI Encuentro Sudamericano de Colisiones Inelásticas en la Materia, Rosario, Argentina (November 2012).
- [92] D.M. Mitnik, G. Gasaneo, and L.U. Ancarani, “Uso del método de Funciones Sturmianas Generalizadas en un problema modelo de colisiones atómicas”, Poster paper presented at the VI Encuentro Sudamericano de Colisiones Inelásticas en la Materia, Rosario, Argentina (November 2012).
- [93] C.A. Ríos Rubiano, M.S. Gravielle, and D.M. Mitnik, “Emisión foto–electrónica desde una superficie metálica: efectos de la estructura de bandas”, Invited talk presented at the VI Encuentro Sudamericano de Colisiones Inelásticas en la Materia, Rosario, Argentina (November 2012).

- [94] J. Aguiar and D.M. Mitnik, “Estructura electrónica de Be, Al Ti y W mediante espectroscopía Compton y comparaciones con la teoría de la funcional densidad”, Invited talk presented at the VI Encuentro Sudamericano de Colisiones Inelásticas en la Materia, Rosario, Argentina (November 2012).
- [95] J. Del Punta, M. J. Ambrosio, G. Gasaneo, D.M. Mitnik, L.U. Ancarani, and S.A. Zaytsev, “Non homogeneous solution to a Coulomb Schrödinger equation as a basis set for scattering problems”. Poster paper presented at the XXVIII International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) conference, Lanzhou, China (Sep 2013).
- [96] M. J. Ambrosio, G. Gasaneo, F.D. Colavecchia, and D.M. Mitnik, “Efficiency improvements for the Generalized Sturmian method on scattering problems”. Poster paper presented at the XXVIII International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) conference, Lanzhou, China (Sep 2013).
- [97] K.V. Rodriguez, D.M. Mitnik, and G. Gasaneo, “Study of two correlated electrons confined by harmonic potentials”. Poster paper presented at the XXVIII International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) conference, Lanzhou, China (Sep 2013).
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- [100] I.A. Gómez, M.J. Ambrosio, G. Gasaneo, D.M. Mitnik, B. Piraux, and D. Arbó, “A generalized Sturmian approach to photoionization of hydrogen by electromagnetic pulses”. Poster paper presented at the XXVIII International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) conference, Lanzhou, China (Sep 2013).
- [101] J.M. Randazzo, D.M. Mitnik, L.U. Ancarani, F.D. Colavecchia, and G. Gasaneo, “Double photoionization cross sections of helium using a simple set of outgoing Sturmian Functions”. Poster paper presented at the XXVIII International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) conference, Lanzhou, China (Sep 2013).
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- [104] L.U. Ancarani, G. Gasaneo, M.J. Ambrosio, F.D. Colavecchia, J.M. Randazzo, and D.M. Mitnik, “Convergence issues in existing numerical methods for describing the double ionization of helium by high energy electron impact”. Invited talk presented at the International Symposium on  $(e, 2e)$ , Double Photoionization and Related Topics,

- and 17<sup>th</sup> International Symposium on Polarization and Correlation in Electronic and Atomic Collisions, Hefei, China (Aug. 2013).
- [105] J.M. Randazzo, L.U. Ancarani, G. Gasaneo, F.D. Colavecchia, and D.M. Mitnik, “Complete treatment of a three-body break-up Coulomb problem with generalised Sturmian functions”. Invited talk presented at the International Symposium on  $(e, 2e)$ , Double Photoionization and Related Topics, and 17<sup>th</sup> International Symposium on Polarization and Correlation in Electronic and Atomic Collisions, Hefei, China (Aug. 2013).
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- [107] C.M. Granados Castro, L.U. Ancarani, G. Gasaneo, and D.M. Mitnik, “Sturmian approach to the study of photoionization of atoms and molecules”. Contributed talk presented at the 66<sup>th</sup> Annual Gaseous Electronics Conference, Princeton, New Jersey, USA (Oct. 2013).
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- [110] J.M. Randazzo, L.U. Ancarani, D.M. Mitnik, G. Gasaneo, and F.D. Colavecchia, “Single and double photoionization of atoms by  $n$ -photon absorption at low intensity laser fields: a Sturmian approach”. Poster paper presented at the International Conference on Many Particle Spectroscopy of Atoms, Molecules and Surfaces, Metz, France (July 2014).
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- [116] J.M. Randazzo, A.L. Frapiccini, D.M. Mitnik, G. Gasaneo, and F.D. Colavecchia, “Double Photoionization of confined atoms in  $n$ -walled fullerenes”. Poster paper presented at the XXIX International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) conference, Toledo, Spain (Sep 2015).
- [117] M.J. Ambrosio, D.M. Mitnik, G. Gasaneo, E.L. Gaggioli and F.D. Colavecchia, “Ionization of Helium by electron and proton impact”. Poster paper presented at the XXIX International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) conference, Toledo, Spain (Sep 2015).
- [118] A.L. Frapiccini, G. Gasaneo, D.M. Mitnik, and F.D. Colavecchia, “Effect of the fullerene confining potential in the  $1s \rightarrow 2p$  resonant transition of H”. Poster paper presented at the XXIX International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) conference, Toledo, Spain (Sep 2015).
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- [121] C.M. Granados–Castro, L.U. Ancarani, X. Assfeld, G. Gasaneo, and D.M. Mitnik, “Sturmian approach to study photoionization of molecules”. Poster paper presented at the XXIX International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) conference, Toledo, Spain (Sep 2015).
- [122] A.I. Gómez, G. Gasaneo, and D.M. Mitnik, “Generalized Sturmian approach to extracting transition amplitudes for two-photon ionization of atoms by electromagnetic pulses”. Poster paper presented at the XXIX International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC) conference, Toledo, Spain (Sep 2015).
- [123] A.I. Gómez, G. Gasaneo, D.M. Mitnik, M.J. Ambrosio, and L.U. Ancarani, “Scattering problems with nondecaying sources: Two-Photon ionization as a benchmark”. Poster paper presented at the Colloque commun de la division de Physique Atomique et Moléculaire et Optique de la SFP et des Journées de Spectroscopie Moléculaires PAMO–JSM Bordeaux, France, (July 2016).
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- [125] E.L. Gaggioli, M.J. Ambrosio, D.M. Mitnik, L.U. Ancarani, and G. Gasaneo, “Double ionization of helium by 6 MeV protons”. Poster paper presented at the International Conference on Many Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces (MPS 2016) Moscow, Russia, (August 2016).

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- [127] C.M. Granados–Castro, L.U. Ancarani, G. Gasaneo, and D.M. Mitnik, “Photoionization of molecules: a Sturmian approach”. Poster paper presented at the International Conference on Many Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces (MPS 2016) Moscow, Russia, (August 2016).
- [128] C.M. Granados–Castro, L.U. Ancarani, G. Gasaneo, and D.M. Mitnik, “Photoionization of CH<sub>4</sub>, H<sub>2</sub>O and NH<sub>3</sub>: a Sturmian approach”. Poster paper presented at the 12<sup>th</sup> European Conference on Atoms Molecules and Photons (ECAMP12), Frankfurt, Germany, (September 2016).
- [129] A.I. Gómez, G. Gasaneo, D.M. Mitnik, M.J. Ambrosio and L.U. Ancarani, “Sturmian approach to extract transition amplitudes in scattering problems with nondecaying sources”. Invited talk presented at Molecular Electronic Structure (MESBA2016), Buenos Aires, Argentina (Sept 2016).
- [130] M.P.A. Mendez, D.M. Mitnik, and J.E. Miraglia, “Effective orbital potentials for second row–hydrides (XH<sub>n</sub>)”. Invited talk presented at Molecular Electronic Structure (MESBA2016), Buenos Aires, Argentina (Sept 2016).
- [131] L.U. Ancarani, C.M. Granados-Castro, M.J. Ambrosio, A.I. Gómez, E.L. Gaggioli, J.M. Randazzo, D.M. Mitnik and G. Gasaneo, “Generalized Sturmian functions applied to ionization processes of atoms and molecules”. Invited talk presented at Molecular Electronic Structure (MESBA2016), Buenos Aires, Argentina (Sept 2016).
- [132] A.I. Gómez, G. Gasaneo, D.M. Mitnik, M.J. Ambrosio and L.U. Ancarani, “Two-photon ionization with Generalized Sturmians Functions method”. Poster paper presented at Molecular Electronic Structure (MESBA2016), Buenos Aires, Argentina (Sept 2016).
- [133] C.C. Montanari, D.M. Mitnik, J.C. Aguiar, R.C. Fadanelli, C.D. Nascimento, M. Behar, A. Tuross and E. Guziejewicz, “Energy loss in zinc oxide”. Poster paper presented at Molecular Electronic Structure (MESBA2016), Buenos Aires, Argentina (Sept 2016).
- [134] L.U. Ancarani, E.L. Gaggioli, M.J. Ambrosio, D.M. Mitnik, and G. Gasaneo, “Double ionization of helium by impact of fast protons”. Poster paper presented at the 69<sup>th</sup> Annual Gaseous Electronics Conference Bochum, Germany, (October 2016).
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- [137] C. Ríos Rubiano, R. Della Picca, D.M. Mitnik, S. Silkin, and M.S. Gravielle, “Crystallographic orientation in photoelectron emission from metal surfaces by ultrashort laser pulses”, Poster paper presented at the Frontiers in Physical Sciences Conference, Buenos Aires, Argentina, (November 2016).

- [138] J.I. Peralta, M.C. Vieytes, J.M.I. Fontenla, A.M.P. Mendez, and D.M. Mitnik, “Mg I atomic model for solar and stellar atmospheres”, Poster paper presented at the 12<sup>th</sup> International Colloquium on Atomic Spectra and Oscillator Strengths for Astrophysical and Laboratory Plasmas, Sao Pablo, Brasil, (December 2016).
- [139] M.J. Ambrosio, A.I. Gomez, L.U. Ancarani, D.M. Mitnik, and G. Gasaneo, “Proton impact double ionization of helium: Generalized Sturmian Functions approach”, Poster paper presented at the International Symposium on ion–atom collision, Queensland, Australia (July 2017).
- [140] M.J. Ambrosio, A.I. Gomez, G. Gasaneo, L.U. Ancarani, and D.M. Mitnik, “Beat structure in the solution of scattering problems with nondecaying sources”, Invited Talk presented at the ( $e, 2e$ ), double photo–ionization and related topics Conference, Palm Cove, Australia, (August 2017).
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- [142] A.I. Gomez, M.J. Ambrosio, D.M. Mitnik, and G. Gasaneo, “Exploring different momentum–transfer regimes in proton–helium collisions”, Poster paper presented at the XXX International Conference on Photonic, Electronic and Atomic Collisions, Cairns, Australia, (July 2017).
- [143] C.A. Rios Rubiano, R. Della Picca, D.M. Mitnik, and M.S. Gravielle, “Effects due to the induced potential in ultrashort laser interactions with Al(100) and Al(111) surfaces”, “Exploring different momentum–transfer regimes in proton–helium collisions”, Poster paper presented at the XXX International Conference on Photonic, Electronic and Atomic Collisions, Cairns, Australia, (July 2017).
- [144] A.M.P. Mendez, D.M. Mitnik and C.C. Montanari, “Fully relativistic structure calculations of heavy targets for inelastic collisions”, Invited talk presented at the 7<sup>th</sup> Topical Conference of the Indian Society of Atomic and Molecular Physics, Tirupati, India (January 2018).
- [145] A.M.P. Mendez, D.M. Mitnik and C.C. Montanari, “Inelastic collision calculations of heavy targets”, Invited talk presented at the 9<sup>th</sup> International Symposium on BioPIXE, Foz do Iguazu, Brasil (February 2018).
- [146] C.C. Montanari, A.M.P. Mendez, D.M. Mitnik, U. Singh, M. Oswal, S. Kumar, G. Singh, D. Mehta, K.P. Singh, and T. Nandi, “L shell ionization cross sections in relativistic atoms by swift heavy ions”, Poster paper presented at the 10<sup>th</sup> International Symposium on Swift Heavy Ions in Matter and 28<sup>th</sup> International Conference on Atomic Collisions in Solids, Caen, Francia (July 2018).
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- [148] C.C. Montanari, A.M.P. Mendez, J.E. Miraglia, and D.M. Mitnik, “Theoretical developments for the stopping power in an extended energy range”, Poster paper presented at the 10<sup>th</sup> International Symposium on Swift Heavy Ions in Matter and 28<sup>th</sup> International Conference on Atomic Collisions in Solids, Caen, Francia (July 2018).
- [149] D.M. Mitnik, A. Mendez, and J.E. Miraglia, “Depurated Inversion Method for Effective Molecular Potentials”, Invited talk presented at the International Conference on Molecular Electronic Structure Metz, Francia, (August 2018).

- [150] A.M.P. Mendez, D.M. Mitnik, and C.C. Montanari, “Ionización de la capa L de blancos sólidos Ta, W, Pt, Au, Pb, Bi, Th y U”, Poster paper presented at the IX Conferencia Sudamericana de Colisiones Inelásticas en la Materia, Viña del Mar, Chile, (November 2018).
- [151] C.C. Montanari, A.M.P. Mendez, D.M. Mitnik, and J.E. Miraglia, “Cálculo de poder de frenado en un rango amplio de energías del proyectil”, Invited talk presented at the IX Conferencia Sudamericana de Colisiones Inelásticas en la Materia, Viña del Mar, Chile, (November 2018).
- [152] A.M.P. Mendez, D.M. Mitnik, and J.E. Miraglia, “Potenciales efectivos atómicos y moleculares”, Invited talk presented at the IX Conferencia Sudamericana de Colisiones Inelásticas en la Materia, Viña del Mar, Chile, (November 2018).
- [153] A.M.P. Mendez, J.I. Di Filippo, S.D. López, and D.M. Mitnik, “Bayesian atomic structure calculations for collisional problems”, Poster paper presented at the XXXI International Conference on Photonic, Electronic and Atomic Collisions, Deauville, France, (August 2019).
- [154] A.M.P. Mendez, J.I. Di Filippo, S.D. López, and D.M. Mitnik, “Gaussian Processes Optimization of atomic structure for collisional problems calculation”, Poster paper presented at the 20<sup>th</sup> International Symposium on Correlation, Polarization and Ionization in Atomic and Molecular Collisions, Metz, France, (August 2019).
- [155] C. Montanari, A. Mendez, D. Mitnik, M. Oswal, S. Kumar, U. Singh, G. Singh, K.P. Singh, D. Mehta, D. Mitra, T. Nandi, “L-shell ionization cross sections of Ta, Pt, Th, and U by Si ion”, Poster paper presented at the 24<sup>th</sup> International Conference on Ion Beam Analysis, Antibes, France (October 2019).
- [156] C.C. Montanari, A. Mendez, D. Mitnik, J. Miraglia, “Stopping power of ions in solids: current interest, data needs and new theoretical results”, Invited talk presented at the 24<sup>th</sup> International Conference on Ion Beam Analysis, Antibes, France (October 2019).
- [157] C.C. Montanari, A. Mendez, D. Mitnik, J. Miraglia, P.A. Miranda, M. Aguilera, J. Wachter, R. Correa, E. Alves, N. Catarino, and R.C. Da Silva, “Experimental and theoretical results for stopping power of protons in Hafnium”, Poster paper presented at the 24<sup>th</sup> International Conference on Ion Beam Analysis, Antibes, France (October 2019).
- [158] A.M.P. Mendez, J.E. Miraglia, and D.M. Mitnik, “Cálculos de estructura atómica para procesos colisionales”, Invited talk presented at the Reunión Latinoamericana de Espectroscopía Atómica y sus Actuales Aplicaciones, CIOp, La Plata, Argentina (October 2019).
- [159] A.M.P. Mendez, C.C. Montanari, D.M. Mitnik, and J.E. Miraglia, “Stopping power in heavy atoms, the role of 4f electrons”, Poster paper presented at the 11<sup>th</sup> International Symposium on Swift Heavy Ions in Matter and 29<sup>th</sup> International Conference on Atomic Collisions in Solids, Helsinki, Finland (June 2020).
- [160] D.M. Mitnik, F.A. López, and L.U. Ancarani, “Generalized Sturmian Functions in prolate spheroidal coordinates”, Invited talk presented at the Warsaw Molecular Electronic Structure Conference, Warsaw, Poland (September 2020).
- [161] A.L. Frapiccini, D.M. Mitnik, A.F. López, and L.U. Ancarani, “Generalized Sturmian functions in prolate spheroidal coordinates for continuum states”, Poster paper presented at the XXXII International Conference on Photonic, Electronic and Atomic Collisions, Canadá (virtual), (July 2021).

- [162] A.L. Frapiccini and D.M. Mitnik, “Photoionization of hydrogen confined in onion shells with Generalized Sturmians in the time–dependent frame”, Poster paper presented at the XXXII International Conference on Photonic, Electronic and Atomic Collisions, Canadá (virtual), (July 2021).
- [163] A.L. Frapiccini, D.M. Mitnik, A.F. López, and L.U. Ancarani, “Generalized Sturmians functions in prolate spheroidal coordinates for continuum states”, Invited poster presented at the 21<sup>th</sup> International Symposium on Correlation, Polarization and Ionization in Atomic and Molecular Collisions, Illinois, USA (July 2021).
- [164] D.M. Mitnik, A.L. Frapiccini, and L.U. Ancarani, “Generalized Sturmians Functions in prolate spheroidal coordinates for continuum states of diatomic systems”, Invited talk to be presented at the 2021 Gaseous Electronics Conference, Huntsville, Alabama, USA, (October 2021).
- [165] A. Mendez, J. Peralta, D. Mitnik, and C. Montanari, “Stopping power in heavy targets: lanthanides, transition metals and beyond”, Invited talk presented at the 29<sup>th</sup> International conference on atomic collisions in solids (ICACS 2022), Helsinki, Finland (June 2022).
- [166] D.M. Mitnik, F. Bivort Haiek, A.M.P. Mendez, and C.C. Montanari, “Machine Learning modelling the IAEA stopping power database”, Invited talk presented at the 29<sup>th</sup> International conference on atomic collisions in solids (ICACS 2022), Helsinki, Finland (June 2022).
- [167] C. Montanari, A. Mendez, J. Peralta, and D. Mitnik, “Stopping power in very heavy targets: from lanthanides to post- transition metals”, Invited talk presented at the 22<sup>th</sup> International Conference on Ion Beam Modification of Materials (IBMM-2022), Lisbon, Portugal (July 2022).
- [168] C. Montanari, F. Bivort Haiek, A. Mendez, and D. Mitnik, “Machine learning modeling of the stopping power experimental data”, Invited poster presented at the 22<sup>th</sup> International Conference on Ion Beam Modification of Materials (IBMM-2022), Lisbon, Portugal (July 2022).
- [169] F. Bivort Haiek, A.M.P. Mendez, D.M. Mitnik, and C.C. Montanari, “Aprendizaje automático en Stopping Power: datos y modelos”, Invited talk presented at the X Conferencia Latinoamericana de Colisiones Inelásticas en la Materia (CLACIM 2022), Salta, Argentina (2022).