

Publicaciones 2016

Departamento de Física

Joaquín Escalona Segura

WA. Rios Herrera, J. Escalona, D. Rivera-López, M.F. Müller. On the estimation of phase synchronization, spurious synchronization and filtering.

Chaos. Vol 26. 123106 (2016). <http://dx.doi.org/10.1063/1.4970522>

Miguel Eduardo Mora Ramos

M.

A. Londoño, J. D. Giraldo-Gómez, R. L. Restrepo, M. E. Mora-Ramos, C. A. Duque. Solving Schrödinger equation by meshless methods. H. Montegranario, Revista Mexicana de Física E. 2016. 2016. vol. 62, 96-107 . Doi.: http://rmf.smf.mx/pdf/rmf-e/62/2/62_2_96.pdf

E. Kasapoglu, S. Sakiroglu, I. Sökmen, R. L. Restrepo, M. E. Mora-Ramos, C. A. Duque. The effects of electric and intense laser fields on the binding energies of donor impurity states ($1s$ and $2p_{\pm}$) and optical absorption between the related states in an asymmetric parabolic quantum well. Optical Materials. 2016. vol. 60, 318-323. <http://dx.doi.org/10.1016/j.optmat.2016.08.007>

J. D. Correa, E. Flórez-Yepes, M. E. Mora-Ramos. Ab-initio study of hydrogen adsorption in nitrogen-doped carbon nanotubes. Physical Chemistry Chemical Physics. 2016. vol 16, 25663. Doi: 0.1039/C6CP04531F

Duque, C. M.; Correa, J. D.; Morales, A. L.; Mora-Ramos, M. E.; Duque, C. A. Laterally Coupled Circular Quantum Dots under Applied Electric Field. Phys. E Low-dimensional Syst. Nanostructures 2016, 77, 34–43. <http://dx.doi.org/10.1016/j.physe.2015.10.024>

Acosta, R. E.; Morales, A. L.; Duque, C. M.; Mora-Ramos, M. E.; Duque, C. A. Optical Absorption and Refractive Index Changes in a Semiconductor Quantum Ring: Electric Field and Donor Impurity Effects. Phys. status solidi 2015. DOI 10.1002/pssb.201552514

Hoyos, J. H.; Correa, J. D.; Mora-Ramos, M. E.; Duque, C. A. Nonlinear Optical Response in a Zincblende GaN Cylindrical Quantum Dot with Donor Impurity Center. *Phys. B Condens. Matter* 2016, 484, 73–82. <http://dx.doi.org/10.1016/j.physb.2015.12.038>

Tiutiunnyk, A.; Akimov, V.; Tulupenko, V.; Mora-Ramos, M. E.; Kasapoglu, E.; Ugan, F.; Sökmen, I.; Morales, A. L.; Duque, C. A. Electronic Structure and Optical Properties of Triangular GaAs/AlGaAs Quantum Dots: Exciton and Impurity States. *Phys. B Condens. Matter* 2016, 484, 95–108. <http://dx.doi.org/10.1016/j.physb.2015.12.045>

Tiutiunnyk, A.; Akimov, V.; Tulupenko, V.; Mora-Ramos, M. E.; Kasapoglu, E.; Morales, A. L.; Duque, C. A. Electron and Donor-Impurity-Related Raman Scattering and Raman Gain in Triangular Quantum Dots under an Applied Electric Field. *Eur. Phys. J. B* 2016, 89 (4), 1–9. [doi:10.1140/epjb/e2016-70001-3](https://doi.org/10.1140/epjb/e2016-70001-3)

Yesilgul, U.; Al, E. B.; Martínez-Orozco, J. C.; Restrepo, R. L.; Mora-Ramos, M. E.; Duque, C. A.; Ugan, F.; Kasapoglu, E. Linear and Nonlinear Optical Properties in an Asymmetric Double Quantum Well under Intense Laser Field: Effects of Applied Electric and Magnetic Fields. *Opt. Mater. (Amst.)* 2016, 58, 107–112. <http://dx.doi.org/10.1016/j.optmat.2016.03.043>

Duque, C. M.; Acosta, R. E.; Morales, A. L.; Mora-Ramos, M. E.; Restrepo, R. L.; Ojeda, J. H.; Kasapoglu, E.; Duque, C. A. Optical Coefficients in a Semiconductor Quantum Ring: Electric Field and Donor Impurity Effects. *Opt. Mater. (Amst.)* 2016, 60, 148–158. <http://dx.doi.org/10.1016/j.optmat.2016.07.024>

Markus F. Müller

JC. Torres-Guzmán, T. Buhse, EM. de la Calleja, A. González-Espinoza, G. Martínez-Mekler, F. Montoya, E. Ramírez-Álvarez, MA. Rivera-Islas, A. Rodríguez-Álvarez, M.F. Müller, Irregular Liesegang-type patterns in gas phase revisited. I. Experimental setup, data processing, and test of the spacing law,

Journal of Chemical Physics, 2016, 144, 174701. [doi: 10.1063/1.4946791](https://doi.org/10.1063/1.4946791)

JC. Torres-Guzmán, G. Martínez-Mekler, and M.F. Müller. Irregular Liesegang-type patterns in gas phase revisited. II. Statistical correlation analysis. *Journal of Chemical Physics* 144, 174702 (2016); doi: 10.1063/1.4946792

E. Ramírez-Álvarez, F. Montoya, T. Buhse, W. Rios-Herrera, J. Torres-Guzmán, MA. Rivera, G. Martínez-Mekler, M.F. Müller. On the dynamics of Liesegang-type pattern formation in a gaseous system. *Scientific Reports* 2016, 6, 23402.

DOI: 10.1038/srep23402

WA. Rios Herrera, J. Escalona, D. Rivera-López, M.F. Müller. On the estimation of phase synchronization, spurious synchronization and filtering. *Chaos*. Vol 26. 123106 (2016)

<http://dx.doi.org/10.1063/1.4970522>

Rolando Pérez Álvarez

J. A. Briones-Torres, R. Pemas-Salomón, R. Pérez-Alvarez and I. Rodríguez-Vargas, Hybrid matrix method for stable numerical analysis of the propagation of Dirac electrons in gapless bilayer graphene superlattices, *Superlattices and Microstructures*. 2016, vol. 93, 186-201. doi: <http://dx.doi.org/10.1016/j.spmi.2016.03.015>

R. Pérez-Álvarez and R. Pemas-Salomón, Ubiquity of the Sturm-Liouville problem in multilayer systems, *EPL (Europhysics Letters)*, 2016. 115:1, 10010. <http://dx.doi.org/10.1209/0295-5075/115/10010>.

María de la Luz Silba-Vélez, R. Pemas y R. Pérez-Alvarez, Ecuación de Schrodinger con masa variable unidimensional, chapter in *Some current topics in condensed matter physics*, M. E. Mora-Ramos, R. Pérez-Álvarez, L. M. Gaggero-Sager, pp 1-47 (2014). ISBN: 978-607-8434-79-4. ISBN (colección): 978-607-8434-78-7.

Alejandro Ramirez Solís

A. Ramírez-Solís, CM. Zicovich-Wilson, R. Hernández and AJ Ochoa-Calle. Antiferromagnetic vs. non-magnetic ϵ phase of solid oxygen. Periodic Density Functional Theory studies using localized atomic basis and the role of exact exchange. *Physical Chemistry*

Chemistry — Chemical — Physics. — 2016, — 19, — 2826.

Av. Universidad 1001 Col. Chamilpa Cuernavaca, Mor. C.P. 62209 Tels. 777 3 29 70 40 Ext. 3684

DOI:10.1039/C6CP07445F.

<http://pubs.rsc.org/en/Content/ArticleLanding/2017/CP/C6CP07445F#!divAbstract>

Cl. León-Pimentel, JI. Amaro-Estrada, H. Saint-Martín and A. Ramírez Solís. Born-Oppenheimer molecular dynamics studies of Pb(II) micro hydrated gas phase clusters. Journal of Chemical Physics. 2017, 146, 084307.

<http://dx.doi.org/10.1063/1.4894286>

W.L. Mochán, A. Ramírez-Solís. Detector of Drugs and Explosives used by Mexican Armed Forces Proved Useless.

IEEE Technology and Society Magazine. 2016. vol.5. (in press)

Marco Antonio Rivera Islas

JC. Torres-Guzmán, T. Buhse, EM. de la Calleja, A. González-Espinoza, G. Martínez-Mekler, F. Montoya, E. Ramírez-Álvarez, MA. Rivera-Islas, A. Rodríguez-Álvarez, M.F. Muller, Irregular Liesegang-type patterns in gas phase revisited. I. Experimental setup, data processing, and test of the spacing law,

Journal of Chemical Physics, 2016, 144, 174701.

<http://dx.doi.org/10.1063/1.4946791>

E. Ramírez-Álvarez, F. Montoya, T. Buhse, W. Rios-Herrera, J. Torres-Guzmán, MA. Rivera, G. Martínez-Mekler, M.F. Müller, On the dynamics of Liesegang-type pattern formation in a gaseous system, Sci. Rep. 2016, 6, 23402.

doi: 10.1038/srep23402

T. Singla, F. Montoya, M. Rivera, S. Tajima, S. Nakabayashi, P. Parmananda, Synchronization using environmental coupling in mercury beating heart oscillators, Chaos 26, 063103 (2016); doi: 10.1063/1.4953014 CB-127916

I. Tiwari, R. Phogat, P. Parmananda, J. L. Ocampo-Espindola, M.A. Rivera, Intrinsic periodic and aperiodic stochastic resonance in an electrochemical cell, Phys. Rev. E 94, 022210 (2016).

DOI: 10.1103/PhysRevE.94.022210

J. Rodríguez, FB. Yousif, BE. Fuentes, F. Vázquez, MA. Rivera, H. Martínez Valencia, Characterization of Ar-O₂ DC Discharge Employing Langmuir Probe in Conjunction With Photodetachment, IEEE TRANSACTIONS ON PLASMA SCIENCE, VOL. 44, NO. 7, (2016); doi:10.1109/TPS.2016.2578880

Aldo Figueroa, R. Salgado-García, J. Rodríguez, FB Yousif, MA. Rivera, F. Vázquez, Stochastic and Nonlinear, Dynamics in Low-Temperature Plasmas, INTECH, Chapter 18, (2016) <http://dx.doi.org/10.5772/62096>

Raúl Salgado Garcia

A. Figueroa, R. Salgado-García, J. Rodríguez, F.B. Yousif, M.A Rivera and F. Vázquez. Stochastic and Non-linear Dynamics in Low Temperature Plasmas, in the book "Plasma Science and Technology". Editorial Intech, 2016. ISBN 978-953-51-4617-9. DOI: 10.5772/56634

L. A. Corona and R. Salgado-García. Degenerated ground-states in a spin chain with pair interactions: a characterization by symbolic dynamics, Journal of Statistical Mechanics (aceptado, nov. 2016). doi: 10.1088/1742-5468/aa4e5f

Salgado-García, R.; Ugalde, E. Symbolic Complexity for Nucleotide Sequences: A Sign of the Genome Structure. J. Phys. A Math. Theor. 2016, 49 (44), 445601. <http://dx.doi.org/10.1088/1751-8113/49/44/445601>

Salgado-García, R. Normal and Anomalous Diffusion of Brownian Particles on Disordered Potentials. Phys. A Stat. Mech. its Appl. 2016, 453, 55–64. <http://dx.doi.org/10.1016/j.physa.2016.02.042>

Oscar Gerardo Sotolongo Costa

EE. Ramírez-Miquet, O. Sotolongo-Costa, A. Quotb, K. Loubière, L. Prat, J. Perchoux.

~~Profiling oil-water flows in microchannel: preliminary results using optical feedback~~

Av. Universidad 1001 Col. Chamilpa Cuernavaca, Mor. C.P. 62209 Tels. 777 3 29 70 40 Ext. 3684

interferometry. Optical measurement techniques for systems and structures III (OPTIMESS 2015), 251-258. Shaker Publishing, 2016.

<https://hal.archives-ouvertes.fr/hal-01225244v2>

H García-Cervantes, LM Gaggero-Sager, O Sotolongo-Costa, GG. Naumis, I Rodríguez-Vargas. Angle-dependent bandgap engineering in gated graphene superlattices. AIP Advances Vol.6 2016.≡

<http://scitation.aip.org/content/aip/journal/adva/6/3/10.1063/1.4944495> DOI:
10.1063/1.4944495

EE. Ramírez-Miquet, J. Perchoux, K. Loubière, C. Tronche, L. Prat, O. Sotolongo-Costa. Optical feedback interferometry applied to velocity measurement of parallel liquid-liquid flows in microchannel" Sensors 2016, 16, 1233. doi:10.3390/s16081233
www.mdpi.com/journal/sensors ISSN 1424-8220.

O. Sotolongo Costa. Entropy, Earthquakes and tumors Book Chapter. CS-DC'15 World e-Conference. Springer Proceedings. 2016

<http://cs-dc-15.org/papers/foundations/invited-talk/entropy-earthquakes-and-tumors/>

Federico Vázquez Hurtado

J. Rodríguez-Legorreta, F.B. Yousif, B.E. Fuentes, F. Vázquez, M. Rivera, H. Martínez. CHARACTERIZATION OF AR-O₂ DC DISCHARGE EMPLOYING LANGMUIR PROBE IN CONJUNCTION WITH PHOTODETACHMENT. J IEEE Transactions on Plasma Science 2016, 44, 1150-1154. DOI:10.1109/TPS.2016.2578880

J.A. Rojas, I. Rivera, A. Figueroa, F. Vázquez. COUPLED THERMOELECTRIC DEVICES: THEORY AND EXPERIMENT. Entropy 2016, 18, 255; doi:10.3390/e18070255

A. Figueroa, J.A. Rojas, J. Rosales, F. Vázquez. ELECTROMAGNETICALLY DRIVEN FLOW BETWEEN CONCENTRIC SPHERES: EXPERIMENTS AND SIMULATIONS. Recent Advances in Fluid Dynamics with Environmental Applications. Springer, 2016. Pp. 253-264

A. Figueroa, R. Salgado-García, J. Rodríguez, F.Y. Bashir, M. Rivera, F. Vázquez. STOCHASTIC AND NON-LINEAR DYNAMICS IN LOW TEMPERATURE PLASMAS. Plasma Science and Technology - Progress in Physical States and Chemical Reactions, Tetsu Mieno (Ed.), (InTech, 2016). Pp. 535-563. ISBN 978-953-51-2280-7. <http://dx.doi.org/10.5772/62096>

I. Rivera, A. Figueroa, F. Vázquez. OPTIMIZATION OF SUPERCOOLING EFFECT IN NANOSCALED THERMOELECTRIC LAYERS. Communications on Applied and Industrial Mathematics 7 (2) (2016), 98-110. DOI: 10.1515/caim-2016-0008

Departamento de Matemáticas

Antonio Daniel Rivera López

L. Sbitneva, N. Moreno, D. Rivera, R. Valdez. On Systemic Perspective and the Strategies in E-learning: Inquiries in Linear Algebra. Procedia-Social and Behavioral Sciences. 2016, 228, 278-284. <http://dx.doi.org/10.1016/j.sbspro.2016.07.041>

L. Sbitneva, N. Moreno, D. Rivera, G. Hinojosa. Implementation of enhanced assessments in b-learning modality of linear algebra course: the strategy focused on competences development. ICERI2016 Proceedings. 2016. Pp 3981-3986.

ISSN: 2340-1095 doi:10.21125/iceri.2016.1932

WA. Rios-Herrera, J. Escalona, D. Rivera López, M.F. Müller. On the estimation of phase synchronization , spurious synchronization and filtering. An Interdisciplinary Journal of Nonlinear Science. Volume 26, Issue 12. doi: 10.1063/1.4970522

Abarca, M., Rivera, D. Graph Theoretical and Algorithmic Characterizations of Positive Definite Symmetric Quasi-Cartan Matrices. Fundamenta Informaticae. 2016. vol. 149, no. 3, pp. 241-261, 2016 doi: 10.3233/FI-2016-1448

Liudmila Sabinina

A. Grishkov, M. Rasskazova, L. Sabinina. On isotopies of some classes of Moufang loops. *Bul.Acad.Stiinte Repub.Moldova*. 2016. no 1, (80), 70-77

A. Grishkov, M. Rasskazova, L. Sabinina. On the structure of automorphic Moufang loops. *Publ. Math. Debrecen*, 88/3-4 (2016), 261- 267

M.L.Merlini-Giuliani, A.Grishkov y M. Rasskazova, L. Sabinina. Half-isomorphisms of finite automorphic Moufang loops. *Comm. Algebra* (2016), no 10, 4252 – 4261

M.L. Merlini-Giuliani, P. Plaumann, L. Sabinina. Half-Automorphisms of Cayley-Dickson Loops. Capítulo del libro “Lie groups, Differential equations, and Geometry”. Springer, 2016. In press.

Gabriela Hinojosa Palafox

G. Hinojosa, A. Verjovsky y C. Verjovsky-Marcotte. Carousel wild knots are ambient homogeneous. *A Mathematical tribute to Professor José María Montesinos Amilibia*. 2016. Pag. 590 ISBN978-84-608-1684-3 EAN9788460816843.

L. Sbitneva, N. Moreno, G. Hinojosa, D. Rivera. Implementation of enhanced assessments in B-learning modality of Linear Algebra Course: The strategy focus on competences development. *Proceedings of ICERI 2015 Conference*, November 14-16, 2016, Seville, Spain. Pp. 3981-3986. ISBN 978-84-617-5895-1

Larissa Sbitneva

L. Sbitneva, N. Moreno, D. Rivera, R. Valdez, On systemic perspective and the strategies in E-learning: inquiries in linear algebra, *Procedia - Social and Behavioral Sciences*. 2016. pp.278.284. ISSN: 1877-0428.

L. Sbitneva, N. Moreno, G. Hinojosa, D. Rivera. Implementation of enhanced assessments in b-learning modality of linear algebra course: the strategy focused on competences development. *IATED, ICERI2016 Proceedings* ISBN: 978-84-617-5895-1 ISSN: 2340-1095, doi: 10.21125/iceri.2016, pp.3981-3986,

L. Sbitneva, N. Moreno, R. Cortés. Una experiencia acerca del aprendizaje significativo del álgebra vectorial mediante transformaciones isométricas. Acta Latinoamericana de Matemática Educativa ALME 29. ISSN 2448-6469, 2016. pp. 384- 392. Proceedings XXIX Reunión Latinoamericana de Matemática Educativa RELME 29. <http://www.clame.org.mx/documentos/alme29.pdf>

Mesuma Atakishiyeva

Atakishiyeva M.K., Atakishiyev N.M., Franco J.M. On a Discrete Number Operator Associated with the 5D Discrete Fourier Transform. In: Pinelas S., Došlá Z., Došlý O., Kloeden P. (eds) Differential and Difference Equations with Applications. ICDDEA 2015. Springer Proceedings in Mathematics & Statistics, vol 164. Springer, Cham. (2016) pp 273-292. DOI: 10.1007/978-3-319-32857-7_26

Yuriy Karlovych

A.Yu. Karlovich, Yu.I. Karlovich, A.B. Lebre. On a Weighted Singular Integral Operator with Shifts and Slowly Oscillating Data. Complex Anal. Oper. Theory 10 (2016), 1101–1131. ISSN: 1661-8254. DOI:10.1007/s11785-015-452-0

A.Yu. Karlovich, Yu.I. Karlovich, A.B. Lebre: The generalized Cauchy index of some semi-almost periodic functions. Bol. Soc. Mat. Mex., III. Ser. 22 (2016), No. 2, 473–485. ISSN: 1405-213X.

M.A. Bastos, C.C. Carvalho, Yu.I. Karlovich: Index formula for convolution type operators with data functions in $\text{alg}(\text{SO}, P C)$. J. Math. Anal. Appl. 443 (2016), 452–477. ISSN: 0022-247X.

A.Yu. Karlovich, Yu.I. Karlovich, A.B. Lebre: One-Sided Invertibility Criteria for Binomial Functional Operators with Shift and Slowly Oscillating Data. Mediterr. J. Math. 13 (2016), 4413-4435. ISSN: 1660-5446.

Rogelio Valdez

L. Sbitneva, N. Moreno, D. Rivera, R. Valdez. On Systemic Perspective and the Strategies in E-learning: Inquiries in Linear Algebra. *Procedia-Social and Behavioral Sciences*. 2016. Vol. 228. Pages 278-284 Doi: <http://dx.doi.org/10.1016/j.sbspro.2016.07.041>

Departamento de Ciencias Computacionales.

Jorge Hermosillo Valadez

KJ. Baeza Mariscal, J. Hermosillo-Valadez, B. Lara Guzmán (Aceptado 2016). Intentionality and Internal Models in artificial agents. *Pragmatics and Cognition*.

Escobar-Juárez, E.; Schillaci, G.; Hermosillo-Valadez, J.; Lara-Guzmán, B. A Self-Organized Internal Models Architecture for Coding Sensory-motor Schemes.

Front. Robot. AI 2016, 3, 22. DOI: <https://doi.org/10.3389/frobt.2016.00022>

Nodari Vakhania

N. Vakhania, J.A. Hernández, F. Alonso-Pecina and C. Zavala. A simple heuristic for VRP. *Journal of Computer Science Technology Updates*. 2016, 3, 38-44.

<http://dx.doi.org/10.15379/2410-2938.2016.03.02.04>

Bruno Lara Guzman

K.J. Baeza Mariscal, J. Hermosillo and B. Lara. Intentionality And Internal Models In Artificial Agents. *Inquiry*. Ed. Taylor and Francis. ISSN 0020-174X (Print), 1502-3923

E. Escobar, G. Schillaci, J. Hermosillo and B. Lara. A Self Organized Internal Models Architecture for Coding Sensorymotor Schemes. *Frontiers in Robotics and AI*. Special issue: Re-enacting sensorimotor experience for cognition. 2016. Vol 3:22. doi: 10.3389/frobt.2016.00022

G. Schillaci, VV. Hafner, B. Lara. Sensorimotor learning, body representations and sensorimotor simulations for cognition. *Frontiers in Robotics and AI*. Special issue: Re-

enacting sensorimotor experience for cognition. 2016. Vol 3:39.

D. Harrington, G. Koenigsberger, E. Olguin, I. Ilyin, S.V. Berdyugina, B. Lara, and E. Moreno. Alpha Virginis: line-profile variations and orbital elements.

Astronomy & Astrophysics. 2016, 590, A54. ISSN: 0004-6361.

DOI : <http://dx.doi.org/10.1051/0004-6361/201526507>

Pico Villalpando, A.Schillaci, G., Hafner, V.V. and Lara, B., How Do I Sound Like? Forward Models for Robot Ego-Noise Prediction, in Proceedings of the 6th IEEE International Conference on Development and Learning and on Epigenetic Robotics (IEEE ICDL-EpiRob). 2016.

Schillaci, G., Ritter, C. N., Hafner, V.V. and Lara, B. Body Representations for Robot Ego-Noise Modelling and Prediction. Towards the Development of a Sense of Agency in Artificial Agents, in MIT Press Proceedings for the ALife XV: The Fifteenth International Conference on the Simulation and Synthesis of Living Systems. Mexico. 2016.

https://robot-ears.eu/wp-content/uploads/Paper_ALIFE_2016_UBER.pdf

Juan Manuel Rendón Mancha

J. Fuentes, J. Ruiz and J. M. Rendon. Salient Point Tracking for Key Frames Selection in Outdoor Image Sequences, IEEE Latin America Transactions, 2016, 14, 2461-2469, doi: 10.1109/TLA.2016.7530446

Y. Garcés, A. Guerrero, P. Hidalgo, R.E. López, C.D. Wood, R.A. Gonzalez, J.M. Rendón-Mancha. Automatic detection and measurement of viral replication compartments by ellipse adjustment. Sci. Rep. 2016, 6, 36505.

doi: 10.1038/srep36505