



PRODUCCIÓN EN INVESTIGACIÓN DEL INSTITUTO DE INVESTIGACIONES EN MATEMÁTICAS APLICADAS Y EN SISTEMAS

Artículos publicados en revistas indizadas 2019

1. **Alvardo, M., Aguilar, W.E., Garduño, E., Velarde, C.B., Bribiesca, E. and Medina, V.** Mirror symmetry detection in curves represented by means of the slope chain code. *Pattern Recognition*. 2019, Vol. 87, p. 67-79.
2. **Angeles, M.P. and Ortiz, C.G.** An attribute-based classification by threshold to enhance the data matching process. *Journal of Applied Research and Technology*. 2019, Vol. 17, No. 4, p. 272-284.
3. **Ballesteros, M.A., Deckert, D.A. and Hänle, F.** Analyticity of resonances and eigenvalues and spectral properties of the massless Spin-Boson model. *Journal of Functional Analysis*. 2019, Vol. 276, No. 8, p. 2524-2581.
4. **Ballesteros, M.A., Crawford, N., Fraas, M., Fröhlich, J. and Schubnel, B.** Perturbation theory for weak measurements in quantum mechanics, systems with finite-dimensional state space. *Annales Henri Poincaré*. 2019, Vol. 20, No. 1, p. 299-335.
5. **Ballesteros, M.A., Deckert, D.A. and Hänle, F.** Relation between the resonance and the scattering matrix in the massless Spin-Boson model. *Communications in Mathematical Physics*. Vol. 370, p. 249-290.
6. **Solano, P., Grover, J.A., Xu, Y., Barberis, P., Munday, J.N., Orozco, L.A., Phillips, W.D. and Rolston, S.L.** Alignment-dependent decay rate of an atomic dipole near an optical nanofiber. *Physical Review A*. 2019, Vol. 99, Art. No. 013822, 13 p.
7. **Hermosillo, J.A. and Benítez, H.** RUN enhancement through Bayesian networks. *International Journal of Parallel, Emergent and Distributed Systems*. 2019, Vol. 34, No. 5, p. 523-537.
8. **Décio Jr., R.M.S., Pérez, L.D. and Bravo, J.** Exactness of formal asymptotic solutions of a dirichlet problem modeling the steady state of functionally-graded microperiodic nonlinear rods. *Journal of Applied Mathematics and Computational Mechanics*. 2019, Vol. 18, No. 3, p. 45-56.
9. **Caballero, R.O., Bravo, J., Pérez, L.D., Rodríguez, R. and Sabina, F.J.** Homogenization of thermo-magneto-electro-elastic multilaminated composites with imperfect contact. *Mechanics Research Communications*. 2019, Vol. 97, p. 16-21.
10. **Guinovart, D., Merodio, J., López, J.C., Vajravelu, K., Rodríguez, R., Guinovart, R., Bravo, J. and Sabina, F.J.** Asymptotic homogenization applied to flexoelectric rods. *Materials*. 2019, Vol. 12, No. 2, Art. No. 232, 17 p.
11. **Yáñez, D., Bravo, J., Ramírez, A., Rodríguez, R. and Sabina, F.J.** Effective coefficients of isotropic complex dielectric composites in a hexagonal array. *Technische Mechanik*. 2019, Vol. 39, No. 2, p. 220-228.
12. **Pinto da Costa, C., Mallüe, A., Pérez, L.D. and Bravo, J.** An ADMM-AHM integrated approach for problems with rapidly oscillating coefficients. *Defect and Diffusion Forum*. 2019, Vol. 396, p. 81-90.
13. **Cruz, O.L., Guinovart, D., Rodríguez, R., Bravo, J., Guinovart, R., Merodio, J., Penta, R., Otero, J.A., Dumonth, S., Lebona, F. and Sabina, F.J.** An approach for modeling non-ageing linear viscoelastic composites with general periodicity. *Composite Structures*. 2019, Vol. 223, Art. No. 110927, 10 p.

14. Ramírez, A., Penta, R., Rodríguez, R., Grillo, A., Preziosi, L., Merodio, J., Guinovart, R. and **Bravo, J.** Homogenized out-of-plane shear response of three-scale fiber-reinforced composites. *Computing and Visualization in Science*. 2019, Vol. 20, No. 3-6, p. 85-93.
15. **Bribiesca, E.**, Bribiesca, F., Carrillo, Á., Bribiesca, G. and **Havia, N.** A Chain code for representing high definition contour shapes. *Journal of Visual Communication and Image Representation*. 2019, Vol. 61, p. 93-104.
16. **Bribiesca, E.** The spirals of the Slope Chain Code. *Pattern Recognition*. 2019, Vol. 95, p. 247-260.
17. Bustamante, A.P. and **Calleja, R.C.** Computation of domains of analyticity for the dissipative standard map in the limit of small dissipation. *Physica D*. 2019, Vol. 395, p. 15-23.
18. **Contreras, A.**, Lockhart, R.A., Stephens, M.A. and Sun, S.Z. On the use of priors in goodness-of-fit tests. *The Canadian Journal of Statistics*. 2019, Vol. 47, No. 4, p. 560-579.
19. **Cruz, G.**, Esteva, L. and Ferreira, C.P. A mathematical analysis of Zika virus epidemic in Rio de Janeiro as a vector-borne and sexually transmitted disease. *Journal of Biological Systems*. 2019, Vol. 27, No. 1, p. 83-105.
20. **Cruz, C.R.** and **Pineda, L.A.** Promoting optimal user experience through composite challenge tasks. *Applied Sciences*. 2019, Vol. 9, No. 1, Art. No. 4106, 19 p.
21. Zapata, L., Dotov, D.G., Fossion, R.Y., **Froese, T.**, Schilbach, L., Vogeley, K. And Timmermans, B. Multi-scale coordination of distinctive movement patterns during embodied interaction between adults with high-functioning autism and neurotypicals. *Frontiers in Psychology*. 2019, Vol. 9, Art. No. 2760, 7 p.
22. **Froese, T.** and Taguchi, S. The problem of meaning in AI and robotics: Still with us after all these years. *Philosophies*. 2019, Vol. 4, No. 2, 14 p.
23. **Froese, T.** Making sense of the chronology of Paleolithic cave painting from the perspective of material engagement theory. *Phenomenology and the Cognitive Sciences*. 2019, Vol. 18, No. 1, p. 91-112.
24. Candadai, M., Setzler, M., Izquierdo, E. J. and **Froese, T.** Embodied dyadic interaction increases complexity of neural dynamics: A minimal agent-based simulation model. *Frontiers in Psychology*. 2019, Vol. 10, Art. No. 540, 5 p.
25. Mariscal, C., Barahona, A., Aubert-Kato, N., Aydinoğlu, A.U., Bartlett, S., Cárdenas, M.L., Chandru, K., Cleland, C., Cocanougher, B.T., Comfort, N., Cornish-Bowden, A., Deacon, T., **Froese, T.**, Giovannelli, D., Hernlund, D., Hut, P., Kimura, J., Maurel, M.C., Merino, N., Moreno, A., Nakagawa, M., Peretó, J., Virgo, N., Witkowski, O. and Cleaves II, H.J. Hidden concepts in the history and philosophy of origins-of-life studies: A workshop report. *Origins of Life and Evolution of Biospheres*. 2019, Vol. 49, No. 3, p. 111-145.
26. Ramírez, S. and **Froese, T.** The enactive approach to habits: New concepts for the cognitive science of bad habits and addiction. *Frontiers in Psychology*. 2019, Vol. 10, Art. No. 301, 12 p.
27. **Froese, T.** and Froese, R. Comparisons of static brain-body allometries across vertebrates must distinguish between indeterminate and determinate growth. *Nature Ecology & Evolution*. 2019, Vol. 3, p. 1404.
28. **Fuentes, G.** and **Meza, I.V.** Topic discovery in massive text corpora based on Min-Hashing. *Expert Systems with Applications*. 2019, Vol. 136, p. 62-72.
29. Saavedra, J.I., Ibargüengoitia, M.G.E. y **Fuentes, G.** Estimación del esfuerzo de proyectos de software con algoritmos de aprendizaje de máquinas. *ReCIBE, Revista electrónica de Computación, Informática, Biomédica y Electrónica*. 2019, Vol. 8, No. 1, 7 p.
30. **Galán, E.** and **Pérez, E.** Identification of modules with similar gene regulation and metabolic functions based on co-expression data. *Frontiers in Molecular Biosciences*. 2019, Vol. 6, Art. No. 139, 12 p.

31. Hernández, R., Galán, E. and Pérez, E. The protein architecture in Bacteria and Archaea identifies a set of promiscuous and ancient domains. *PLoS ONE*. 2019, Vol. 14, No. 12, Art. No. e0226604, 17 p.
32. García-Azpeitia, C. Relative periodic solutions of the n -vortex problem on the sphere. *Journal of Geometric Mechanics*. 2019, Vol. 11, No. 3, p. 427-438.
33. García, J.M. Quantum geometry I: Basics of loop quantum gravity. The quantum polyhedra. *Revista Mexicana de Física E*. 2019, Vol. 65, p. 7-11.
34. García-Naranjo, L.C. Generalisation of Chaplygin's reducing multiplier theorem with an application to multi-dimensional nonholonomic dynamics. *Journal of Physics A: Mathematical and Theoretical*. 2019, Vol. 52, No. 20, Art. No. 205203, 16 p.
35. García-Naranjo, L.C. Hamiltonisation, measure preservation and first integrals of the multi-dimensional rubber Routh sphere. *Theoretical and Applied Mechanics*. 2019, Vol. 46, No. 1, p. 65-88.
36. García-Naranjo, L.C. Integrability of the n -dimensional axially symmetric chaplygin sphere. *Regular and Chaotic Dynamics*. 2019, Vol. 24, No. 5, p. 450-463.
37. Fassò, F., García-Naranjo, L.C. and Montaldi, J. Integrability and dynamics of the n-dimensional symmetric Veselova top. *Journal of Nonlinear Science*. 2019, Vol. 29, p. 1205-1246.
38. Buendia, A., García, S.I., Landesmann, M., Rodríguez, R., Rondero, N., Rueda, M. y Vera, H. A debate la educación superior y la ciencia en México: recuperar preguntas clave. *Revista Mexicana de Investigación Educativa*. 2019, Vol. 21, No. 2, 4 p.
39. Kim, H., Pineda, O.K. and Gershenson, C. A multilayer structure facilitates the production of antifragile systems in boolean network models. *Complexity*. 2019, Vol 2019, Art. No. ID 2783217, 11 p.
40. Pineda, O.K., Kim, H. and Gershenson, C. A novel antifragility measure based on satisfaction and its application to random and biological boolean networks. *Complexity*. 2019, Vol 2019, Art. No. ID 3728621, 10 p.
41. Escobar, L.A., Kim, H. and Gershenson, C. Effects of antimodularity and multiscale influence in random boolean networks. *Complexity*. 2019, Vol. 2019, Art. No. ID8209146, 14 p.
42. Colman, E., Holme, P., Sayama, H. and Gershenson, C. Efficient sentinel surveillance strategies for preventing epidemics on networks. *PLoS Computational Biology*. 2019, Vol. 15, No. 11, Art. No. e1007517, 19 p.
43. Cocho, G., Rodríguez, R.F., Sánchez, S., Flores, J., Pineda, C. and Gershenson, C. Rank-frequency distribution of natural languages: A difference of probabilities approach. *Physica A. Statistical Mechanics and its Applications*. 2019, Vol. 532, Art. No. 12179, 8 p.
44. Reyes, J., Bel-Enguix, G., Gómez, H.M. and Sierra, G. A lexical search model based on word association norms. *Journal of Intelligent and Fuzzy Systems*. 2019, Vol. 36, p. 4587-4597.
45. Posadas, J.P., Gómez, H.M., Sidorov, G. and Moreno J.J. Detection of fake news in a new corpus for the Spanish language. *Journal of Intelligent and Fuzzy Systems*. 2019, Vol. 36, p. 4869-4876.
46. Gómez, H.M., Fuentes, R., Markov, I., Sidorov, G. and Gelbukh, A. A convolutional neural network approach for gender and language variety identification. *Journal of Intelligent and Fuzzy Systems*. 2019, Vol. 36, p. 4845-4855.
47. Bel-Enguix, G., Gómez, H.M., Reyes, J. and Sierra, G. Wan2Vec: Embeddings learned on word association norms. *Semantic Web Journal*. 2019, Vol. 10, No. 6, p. 991-1006.
48. González-Barrios, J.M., Gutiérrez, E.A. and Rueda, R. A short note on the dependence structure of random vectors. *Statistics & Probability Letters*. 2019, Vol. 146, p. 200-205.

49. García, H. and González, J.^{†1} Solutions of semi-Markov control models with recursive discount rates and approximation by ϵ -optimal policies. *Kybernetika*. 2019, Vol. 55, No. 3, p. 495-517.
50. Gutiérrez, L., Gutiérrez, E.A. and Mena, R.H. A Bayesian approach to statistical shapeanalysis via the projected normal distribution. *Bayesian Analysis*. 2019, Vol. 14, No. 2, p. 427-447.
51. Campirán, E. and Gutiérrez, E.A. Nonparametric product partition models for multiple change-points analysis. *Communications in Statistics – Simulation and Computation*. 2019, Vol. 48, No. 7, p. 1922-1947.
52. Hernández, A.M.², Siqueiros, J.M., Gershenson, C. and Robles, E. Anger while driving in Mexico City. *PLoS ONE*. 2019, Vol. 14, No. 9, Art. No. e0223048, p. 1-20.
53. Ovalle, O.D., Jiménez, I.A., Rascón, R.A., Gómez, R.A., Valdés, A.L., Gamiochipi, M., Doubova, S.V., Valladares, A., Mondragón, R., Méndez, A., Sánchez, M.C., Cruz, M., Salinas, A.M., Garza, M.C., Hernández, J.D.³, González-Hermosillo, A.⁴, Vargas, H.R., Reyes, M., Borja, V.H. and Wacher, N.H. Prevalencia de complicaciones de la diabetes y comorbilidades asociadas en medicina familiar del Instituto Mexicano del Seguro Social. *Gaceta Médica de México*. 2019, Vol. 155, No. 1, p. 30-38.
54. Torres, I., Hernández, N.S., Rodríguez, A., Fuentes, G. y Pineda, L.A. Reasoning with preferences in service robots. *Journal of Intelligent and Fuzzy Systems*. 2019, Vol. 36, No. 5, p. 5105-5114.
55. Hobolth, A., Jégousse, A.C.L. and Bladt, M. Phase-type distributions in population genetics. *Theoretical Population Biology*. 2019, Vol. 127, p. 16-32.
56. Blancas, A., Rogers, T., Schweinsberg, J. and Jégousse, A.C.L. The nested Kingman coalescent: speed of coming down from infinity. *The Annals of Applied Probability*. 2019, Vol. 29, No. 3, p. 1808-1836.
57. Juárez, B.A.⁵ and Moustos, D. Asymptotic states for stationary Unruh-DeWitt detectors. *Physical Review D*. 2019, Vol. 100, No. Art. 025018, 12 p.
58. Juárez, B.A.⁵ Semi-classical gravity in de Sitter spacetime and the cosmological constant. *Physics Letters B*. 2019, Vol. 797, Art. No. 134912, 6 p.
59. Martínez, M.E., Witt, N., Parker, K.H., Hughes, A.D. and Thom, S.M.A. Automatic optic disc detection in colour fundus images by means of multispectral analysis and information content. *PeerJ*. 2019, Published online, Vol. 7, Art. No. e7119, 24 p.
60. Anzarut, M. and Mena, R.H. A Harris process to model stochastic volatility. *Econometrics and Statistics*. 2019, Vol. 10, p. 151-169.
61. Coen, A., Gutiérrez, L. and Mena, R.H. Modelling failures times with dependent renewal type models via exchangeability. *Statistics*. 2019, Vol. 53, No. 5, 1112-1130.
62. Damien, P., Fuentes, R., Mena, R.H. and Zarnikau, J. Impacts of day-ahead versus real-time market prices on wholesale electricity demand in Texas. *Energy Economics*. 2019, Vol. 81, p. 259-272.
63. Leisen, F., Mena, R.H., Palma, F. and Rossini, L. On a flexible construction of a negative binomial model. *Statistics and Probability Letters*. 2019, Vol. 152 p. 1-8.
64. Fuentes, R., Mena, R.H. and Walker, S. Modal posterior clustering motivated by Hopfield's network. *Computational Statisticsand Data Analysis*. 2019, Vol. 137, p. 92-100.

¹ Investigador que causó baja en 2017.

² Becaria Cátedra Extraordinaria IIIMAS, que causó baja el 31 de enero de 2019.

³ Investigador que causó baja en 2018.

⁴ Investigador que causó baja en 2018.

⁵ Becario Posdoctoral.

65. **Méndez, I.^{†6}, Moreno, H., Murata, Ch., Zaldívar, F.D. and López, F.J.** Three paradigms in statistical inference. *Agrociencia*. 2019, Vol. 53, No. 7, p. 1043-1069.
66. **Martínez, A.G. Abadía, C.E., Murata, Ch., Méndez, I.^{†6} and Méndez Gómez-Humaran, I.** Social class for collective health research: A conceptual and empirical challenge. *Global Public Health*. 2019, Vol. 14, No. 6-7, p. 977-995.
67. **Reyes, M.E., Meza, I.V. and Pineda, L.A.** Robotics facial expression of anger in collaborative human-robot interaction. *International Journal of Advanced Robotic Systems*. 2019, Vol. 16, No. 1, 13 p.
68. **Magera, M., Jasso, M., Çetinoğlu, O. and Meza, I.V.** Low-resource neural character-based noisy text normalization. *Journal of Intelligent & Fuzzy Systems*. 2019, Vol. 36, p. 4921-4929.
69. **Aguileta, A.A., Brena, R.F., Mayora, O., Molino, E. and Trejo, L.A.** Multi-sensor fusion for activity recognition—a survey. *Sensors*. 2019, Vol. 19, No. 17, Art. No. 3808, 41 p.
70. **Aguileta, A.A., Brena, R.F., Mayora, O., Molino, E. and Trejo, L.A.** Virtual sensors for optimal integration of human activity data. *Sensors*. 2019, Vol. 19, No. 9, Art. No. 2017, 25 p.
71. **Callejas, A. y Molino, E.** Sistema de adquisición y registro de datos con aplicación de hidrófono. *Ingeniería-Revista Académica de la Facultad de Ingeniería, Universidad Autónoma de Yucatán*. 2019, Vol. 23, No. 1, p. 40-57.
72. **Morales, L.B., Bulutoglu, D.A. and Arasu, K.T.** The maximum number of columns in supersaturated designs with $s_{\max} = 2$. *Journal of Combinatorial Designs*. 2019, Vol. 27, No. 7, p. 448-472.
73. **Cazenave, T., Dickstein, F., Naumkin, I. and Weissler, F.B.** Perturbations of self-similar solutions. *Dynamics of Partial Differential Equations*. 2019, Vol. 16, No. 2, p. 151-183.
74. **Kato, K. and Naumkin, I.** Estimates on the modulation spaces for the Dirac equation with potential. *Revista Matemática Complutense*. 2019, Vol. 32, p. 305-325.
75. **Nurminen, V., Neme, J.A., Seuter, S. and Carlberg, C.** Modulation of vitamin D signaling by the pioneer factor CEBPA. *Biochimica et Biophysica Acta (BBA) - Gene Regulatory Mechanisms*. 2019, Vol. 1862, p. 96-106.
76. **Fleet, J.C., Kovalenko, P.L., Li, Y., Smolinski, J., Spees, C., Yu, J.G., Thomas-Ahner, J.M., Cui, M., Neme, J.A., Carlberg, C. and Clinton, S.K.** Vitamin D signaling suppresses early prostate carcinogenesis in TgAPT₁₂₁ mice. *Cancer Prevention Research*. 2019, Vol. 12, No. 6, p. 343-355.
77. **Beltrán, J.I. and O'Reilly, F.** On goodness of fit tests for the Poisson, negative binomial and binomial distributions. *Statistical Papers*. 2019, Vol. 60, 18 p.
78. **Nájera, E., O'Reilly, F. and Ruiz-Velasco, S.** Fiducial distribution in a power series family. *Communications in Statistics-Theory and Methods*. 2019, Vol. 48, No. 23, p. 5796-5808.
79. **Reyes, A.V., López, I., Osorio, R.V. and Lefranc, G.** 3D pipe reconstruction employing video information from mobile robots. *Applied Soft Computing Journal*. 2019, Vol. 75, p. 562-574.
80. **Bravetti, A. and Padilla, P.** Thermodynamics and evolutionary biology through optimal control. *Automatica*. 2019, Vol. 106, p. 201-206.
81. **Díaz, O., Ramírez, E., Flores, A., Enriquez, C.I., Padilla, P. and Escalera, G.** Amplitude death induced by intrinsic noise in a system of three coupled stochastic Brusselators. *Journal of Computational and Nonlinear Dynamics*. 2019, Vol. 14, No. 4, Art. No. 041004, 7 p.

⁶ Investigador que causó baja en 2018.

82. Rodríguez, E., Miquelajuregui, Y., **Padilla, P.** and Bojórquez, L.A. Modelling approach for crafting environmental regulations under deepuncertainty: Whale watching in Ojo de liebre, Mexico. *Ecological Modelling*. 2019, Vol. 408, Art. No. 108731, 13 p.
83. Sánchez, F., Krause, A.L. Castillo, J.A. and **Padilla P.** Turing-Hopf patterns on growing domains: The torus and the sphere. *Journal of Theoretical Biology*. 2019, Vol. 481, p. 136-150.
84. Martínez, R. and **Panayotaros, P.G.** Classical breathers and quantum coherent states in discrete NLS systems. *Physics Letters A*. 2019, Vol. 383, p. 164-169.
85. Vargas, R.M., **Panayotaros, P.** and Minzoni, A.A.^{†7}, Linear modes for channels of constant cross section and approximate Dirichlet-Neumann operators. *Water Waves*. 2019, Vol. 1, p. 343-370.
86. Assanto, G., **Panayotaros, P.** and Smyth, N.F. Mechanical analogies for nonlinear light beams in nonlocal nematic liquid crystals. *Journal of Nonlinear Optical Physics and Materials*. 2019, Vol. 27, No. 1, Art. No. 1850046, 36 p.
87. Castelán, H.G., Elorrieta, P., Romoacca, P., Liñan, A., Sierra, J.L., Vera, I., Batista, R.A., Tenorio, S., Lizama, G., Pérez, E., Quispe, M.A. and Dávila, S. Intermediate-salinity systems at high altitudes in the peruvian andes unveil a high diversity and abundance of bacteria and viruses. *Genes*. 2019, Vol. 10, No. 11, Art. No. 891, 24 p.
88. Santons, A., Pérez, E., Sánchez, M., Velázquez, D.A. and Collado, J. Tracing the phylogenetic history of the Crl regulon through the *Bacteria* and *Archaea* genomes. *BMC Genomics*. 2019, Vol. 20, Art. 299, 13 p.
89. Mund, A., Kuttler, C. and Pérez, J. Existence and uniqueness of solutions to a family of semi-linear parabolic systems using coupled upper-lower solutions. *Discrete and Continuous Dynamical Systems-Series B*. 2019, Vol. 24, No. 10, p. 5695-5707.
90. Castillo, X., Castro, S., Gutiérrez, B., Gutiérrez, G., Nikolaos, K., Khalil, A.A., López, J.S., Lozano, L., Martínez, E., Pérez, C., Pérez, J., Piña, A.L., Rubio, K., Salazar, H.P., Syeda, T., Vanoye, A., Villringer, A., Winek, K. and Zille, M. Re-thinking the etiological framework of neurodegeneration. *Frontiers in Neuroscience*. 2019, Vol. 13, Art. No. 728, 25 p.
91. Pérez, J.L., Luna, F. and Piña, O. Deep learning point cloud registration based on distance features. *IEEE Latin America Transactions*. 2019, Vol. 17, No. 12, p. 2053-2060.
92. Plaza, R.G. Derivation of a bacterial nutrient-taxis system with doubly degenerate cross-diffusion as the parabolic limit of a velocity-jump process. *Journal of Mathematical Biology*. 2019, Vol. 78, No. 1, p. 1681-1711.
93. Padilla, I. and Plaza, R.G. On the role of cancer cells' diffusion in the tumor growth paradox. *Rendiconti di Matematica e delle sue Applicazioni*. 2019, Vol. 40, No. 7, p. 217-231.
94. Pera, D., Málaga, C., Simeoni, C. and Plaza, R.G. On the efficient numerical simulation of heterogeneous anisotropic diffusion models of tumor invasion using GPUs. *Rendiconti di Matematica e delle sue Applicazioni*. 2019, Vol. 40, No. 7, p. 233-255.
95. Angulo, J., Hernández, C.A. and Plaza, R.G. Orbital stability of standing waves for the nonlinear Schrödinger equation with attractive delta potential and double power repulsive nonlinearity. *Journal of Mathematical Physics*. 2019, Vol. 60, Art. No. 071501, 23 p.
96. Lattanzio, C., Mascia, C., Plaza, R.G. and Simeoni, C. Kinetic schemes for assessing stability of traveling fronts for the Allen-Cahn equation with relaxation. *Applied Numerical Mathematics*. 2019, Vol. 141, p. 234-247.

⁷ Investigador que causó baja en 2017.

97. Escobar, P., Hernández, R., Poot, A.C.⁸, Rodríguez, K., Ramírez, J. and Pérez, E. Identification of functional signatures in the metabolism of the three cellular domains of life. *PLoS ONE*. 2019, Vol. 14, No. 5, Art. No. e0217083, 13 p.
98. Falcón, A., Boyer, D. and Ramos, G. Collective learning from individual experiences and information transfer during group foraging. *Journal of the Royal Society Interface*. 2019, Vol. 16, Art. No. 20180803, 9 p.
99. Spaan, D., Ramos, G., Mshaffner, C.M., Smith, S.E., Pinacho, B. and Aureli, F. Standardizing methods to estimate population density: an example based on habituated and unhabituated spider monkeys. *Biodiversity and Conservation*. 2019, Vol. 28, p. 847-862.
100. Palacios, T.M., Castellanos, F. and Ramos, G. Uncovering the decision rules behind collective foraging in spider monkeys. *Animal Behaviour*. 2019, Vol. 149, p. 121-133.
101. Smith, S.E., Aureli, F., Busia, L., Schaffner, C. and Ramos, G. Using multiplex networks to capture the multidimensional nature of social structure. *Primates*. 2019, Vol. 60, No. 3, p. 277-295.
102. Rascón, C.A., Ruiz, O. and Martínez, J. On the use of the aira-uas corpus to evaluate audio processing algorithms in unmanned aerial systems. *Sensors*. 2019, Vol. 19, No. 18, Art. No. 3902, 20 p.
103. Márquez, F.J., Rodríguez, K. and Garro, B.A.⁹ Diseño de rutas de recolección utilizando el algoritmo de optimización por colonia de hormigas. *Revista del Centro de Investigación de la Universidad La Salle*. 2019, Vol. 13, No. 53, p. 19-66.
104. Savage, J., Rosenblueth, D.A., Matamoros, M., Negrete, M., Contreras, L., Cruz, J., Martel, R., Estrada, H. and Okada, H. Semantic reasoning in service robots using expert systems. *Robotics and Autonomous Systems*. 2019, Vol. 114, p. 77-92.
105. Rosenblueth, D.A. A greedy algorithm for decomposing large clothing orders into lays. *Applied Computing Review*. 2019, Vol. 19, No. 3, p. 45-51.
106. Cortez, K.L. and Rosenblueth, J.F. The broken link between normality and regularity in the calculus of variations. *Systems & Control Letters*. 2019, Vol. 124, p. 27-32.
107. Rosenblueth, J.F. Uniqueness of extremals for problems with endpoint and control constraints. *WSEAS Transactions on Systems*. 2019, Vol. 18, p. 164-168.
108. Becerril, J.A., Cortez, K.L. and Rosenblueth, J.F. Uniqueness of multipliers in optimal control: the missing piece. *IMA Journal of Mathematical Control and Information*. 2019, Vol. 36, No. 4, p. 1395-1411.
109. Rubio, E., Solano, J., García, D.F. and Fuentes, M. On the truncation of time frequency distributions to improve the computational performance in the estimation of fundamental parameters of a Doppler ultrasound blood flow signal. *Biomedical Signal Processing and Control*. 2019, Vol. 54, Art. No. 10160, 14 p.
110. Carrillo, E., Ruiz, A.A. y Zizalda, I. El impuesto por la prestación de servicio de hospedaje y su estudio a través del análisis de redes sociales: interdependencia en la promoción y publicidad turística. *Redes. Revista Hispana para el Análisis de Redes Sociales*. 2019, Vol. 30, No. 2, p. 181-198.
111. Carvajal, M., Vargas, M., Hernández, E., Ruiz-Velasco, S. and Rojo, F. Presence of unreported carcinogens, aflatoxins and their hydroxylated metabolites, in industrialized Oaxaca cheese from Mexico City. *Food and Chemical Toxicology*. 2019, Vol. 124, p. 128-138.
112. Villalobos, L., Medina, M.E., Benjet, C., Ruiz-Velasco, S., Magis, C. and Martín, R. Multidimensional patterns of sexual risk behavior and psychiatric disorders in men with substance use disorders. *Archives of Sexual Behavior*. 2019, Vol. 48, p. 599-607.

⁸ Becaria Posdoctoral.

⁹ Becaria Posdoctoral.

113. *Cansino, S., Torres, F., Estrada, C., Ramírez, L., Pérez, M., Nava, A., Hernández, M. and Ruiz-Velasco, S.* Predictors of source memory success and failure in older adults. *Frontiers in Agrin Neuroscience*. 2019, Vol. 11, Art. No. 17, 12 p.
114. *Sabina, F.J., Guinovart, R., Rodríguez, R., Bravo, J. and Sánchez, J.* Simple closed-form property expressions of a metafluid composed of a hexagonal array of transversely isotropic elastic fibres embedded in an ideal fluid. *Mechanics Research Communications*. 2019, Vol. 99, p. 47-51.
115. *Rodríguez, R., Gandarilla, C.A., Lau, L., Lebon, F., Sabina, F.J. and Sevostianov, I.* Maxwell homogenization scheme for piezoelectric composites with arbitrarily-oriented spheroidal inhomogeneities. *Acta Mechanica*. 2019, Vol. 230, p. 3613-3632.
116. *Alfonso, L.D.L., Rodríguez, R., Otero, J.A., Lebon, F., Sabina, F.J., Guinovart, R., Bravo, J.* Effective elastic properties using maxwell's approach for transversely isotropic composites. *Advanced Structured Materials*. 2019, Vol. 100, pp. 183-210.
117. *Silva, L.O. and Toloza, J.H.* Selfadjoint extensions of the multiplication operator in de Branges spaces as singular rank-one perturbations. *Complex Variables and Elliptic Equations*. 2019, Vol. 64, No. 9, p. 1477-1499.
118. *Silva, L.O., Toloza, J.H. and Uribe, A.* Oversampling and undersampling in de Branges spaces arising from regular Schrödinger operators. *Complex Analysis and Operator Theory*. 2019, Vol. 13, p. 2303-2324.
119. *Siqueiros, J.M., Lerner, A.M., Eakin, H.C. and Aguilar, B.H.* A standardization process for mental model analysis in socio-ecological systems. *Environmental Modelling & Software*. 2019, Vol. 112, p. 108-111.
120. *Eakin, H.C., Shelton, R.E., Siqueiros, J.M., Charli-Joseph, L. and Manuel-Navarrete, D.* Loss and social-ecological transformation: pathways of change in Xochimilco, Mexico. *Ecology and Society*. 2019, Vol. 24, No. 3, Art. No. 15, 12 p.
121. *Manuel-Navarrete, D., Morehart, C., Tellman, B., Eakin, H., Siqueiros, J.M. and Hernández, B.* Intentional disruption of path-dependencies in the Anthropocene: Gray versus green water infrastructure regimes in Mexico City, Mexico. *Anthropocene*. 2019, Vol. 26, Art. No. 100209, 11 p.
122. *Eakin, H.C., Siqueiros, J.M., Hernández, B., Shelton, R.E. and Bojórquez, L.A.* Mental models, meta-narratives, and solution pathways associated with socio-hydrological risk and response in Mexico City. *Frontiers in Sustainable Cities*. 2019, Vol. 1, Art. No. 4, 13 p.
123. *Velarde, C.B., Robledo, A.* Dynamical analogues of rank distributions. *PLoS ONE*. 2019, Vol. 14, No. 2, Art. No. e0211226, 15, p.
124. *Vélez, J.A.¹⁰ and Panayotaros, P.G.* Wannier functions and discrete NLS equations for nematicones. *Mathematics in Engineering*. 2019, Vol. 1, No. 2, p. 309-326.
125. *Olivares, L. and Vélez, J.A.¹⁰* Translocation of non-interacting heteropolymer protein chains in terms of single helical propensity and size. *Biochimica et Biophysica Acta (BBA) - Proteins and Proteomics*. 2019, Vol. 1867, No. 6, p. 565-574.

¹⁰ Becario Posdoctoral.