PRODUCTOS DE INVESTIGACIÓN Y DESARROLLO

Publicados en las revistas JCR

1. **Fernando Castaños,** Edgar Estrada, **Sabine Mondié** y Adrián Ramírez. "Passivity-based PI control of first-order systems with I/O communication delays: a frequency domain analysis. *Int. J. Control*, (2018) 91:2549 – 2562.
2. Félix Miranda, Bernard Brogliato, and **Fernando Castaños. "**Set-valued sliding-mode control of uncertain linear systems: Continuous and discrete-time analysis". *SIAM J. Control Optim.*, (2018) 56:1756 – 1793.
3. C. A. Franco and **J. Collado.** "On periodic differential equations with dissipation". *Electronic Journal of Qualitative Theory of Differential Equations*. 2018, No. 91, 1–17;
4. Kevin López, **Rubén Garrido, Sabine Mondié**. "Cascade proportional integral retarded control of servodrives". *Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering*, (2018), Vol. 232, No. 6, 662−671.
5. M. A. Hernández-Pérez, B. del Muro-Cuéllar, M. Velasco-Villa, D. F. Novella-Rodríguez, **Rubén Garrido,** P. J. García-Ramírez. "An improvement on the PI controller for a class of high-order unstable delayed systems: Application to a thermal process". *Control Engineering and Applied Informatics*. (2018), Vol. 20, No. 1, 25−35.
6. C. Aguilar Ibanez, **J. C. Martinez Garcia**, **A. Soria Lopez**, J. d. J. Rubio and M. S. Suarez Castanon, "Stabilization of the Inverted Cart-Pendulum System with Linear Friction," *IEEE Latin America Transactions*, vol. 16, no. 6, pp. 1650-1657, 2018.
7. Aguilar-Ibañez, C., Suarez-Castanon, M.S., Mendoza-Mendoza, J., Jose de Jesus Rubio, **J.C. Martinez García**. Output-Feedback Stabilization of the PVTOL Aircraft System Based on an Exact Differentiator, *J Intell Robot Syst* (2018) 90: 443-454.
8. Carlos Aguilar-Ibañez, E. Garcia-Canseco, **Rafael Martínez-Guerra, J. C. Martinez-Garcia** and M. S. Castañon, "An I & I-based Observer to solve the output-feedback Synchronization problem for a Class of Chaotic Systems", *Asian Journal of Control*, 20, 4, pp. 1491-1503, 2018F.
9. Melendez-Vazquez, O. Martinez-Fuentes and **Rafael Martínez-Guerra**, **"**Fractional Fault Tolerant dynamical Controller for a Class of Commensurate-order Fractional Systems", *International Journal of Systems Science*, 49, 1, pp. 196-210, 2018
10. Javier Montesino-Garcia, **Rafael Martinez-Guerra,** "Color Image Encrryption via Fractional Chaotic State Estimation", *IET Image Processing*, 12, 10, pp. 1913-1920, 2018**.**
11. Fidel Melendez-Vazquez, **Rafael Martinez-Guerra**, "A reduced fractional Integral observer for Synchronization and Anti-synchronization of fractional-order chaotic systems" *IET Control Theory & Applications*, 12, 12, pp. 1755-1762, 2018.
12. Oscar Martinez-Fuentes, **Rafael Martinez-Guerra**, "A novel Mittag-Leffler stable estimator for nonlinear fractional –order systems: A linear quadratic regulator approach", *Nonlinear Dynamics*, 94, 3, pp. 1973-1986, 2018.
13. Ricardo Aguilar-Lopez, Juan L. Mata-Machuca, **Rafael Martinez-Guerra**, Claudia A Perez-Pinacho, "Synchronization of Multiple Mechanical Oscillators under Noisy measurements signal and mismatch parameter", *International Journal of Nonlinear Sciences and Numerical Simulation*, 19, 7, pp. 699-708, 2018.
14. Emanuel Rocha Campos, **Sabine Mondié**, Michael Di Loreto, Necessary Stability Conditions for Linear Difference Equations in Continuous Time, *IEEE Transactions on Automatic Control*, 63(12), 4405-4411, 2018.
15. José-Enrique Hernandez-Diez, Cesar-Fernando Mendez-Barrios, **S. Mondié**, S.Niculescu, Proportional-Delayed Controllers Design for LTI-Systems: a Geometric Approach, *International Journal of Control*, 91(4), 907-925, 2018.
16. Luis Juárez, **Sabine Mondié**, and Carlos Cuvas , Connected cruise control of a car platoon: A time-domain stability analysis, Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering, 232(6), 672-682, 2018

17. Julio B. Clempner, **Alexander S. Poznyak**. COMPUTING THE TRANSFER PRICING FOR A MULTIDIVISIONAL FIRM BASED ON COOPERATIVE GAMES. *Economic Computation and Economic Cybernetics Studies and Research*, Issue 1/2018; Vol. 52, pp. 107-126.
18. Julio B. Clempner, **Alexander S. Poznyak**. Sparse mean–variance customer Markowitz portfolio optimization for Markov chains: a Tikhonov's regularization penalty approach. *Optimization and Engineering* (2018), vol.19, No:2, pp. 383–417.
19. Julio B. Clempner, **Alexander S. Poznyak**. Using the Manhattan distance for computing the multiobjective Markov chains problem. *INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS*, 2018, VOL. 95, No: 11, pp. 2269–2286,
20. Kristal K.Trejo, Julio B.Clempner, **Alexander S.Poznyak**. Adapting attackers and defenders patrolling strategies: Areinforcement learning approach for Stackelberg security games. *Journal of Computer and System Sciences, vol.* 95 (2018) pp. 35–54,
21. Julio B. Clempner & **Alexander S. Poznyak** (2018) A Tikhonov regularization parameter approach for solving Lagrange constrained optimization problems, *Engineering Optimization*, vol. 50, No: 11, 1996-2012.
22. Julio B. Clempner1 , **Alexander S. Poznyak.** Constructing the Pareto front for multi-objective Markov chains handling a strong Pareto policy approach**.** *Computational and Applied Mathematics* (2018), vol. 37, pp.567–591. https://doi.org/10.1007/s40314-016-0360-6.
23. **Alexander Poznyak,** Stochastic Super-Twist Sliding Mode Controller, *IEEE TRANSACTIONS ON AUTOMATIC CONTROL*, VOL. 63, NO. 5, MAY 2018, pp. 1538-1544.
24. Julio B. Clempner, **Alexander S. Poznyak**. A Tikhonov regularized penalty function approach for solving polylinear programming problems. *Journal of Computational and Applied Mathematics* Vol. 328 (2018), pp. 267–286.
25. **Alex Poznyak**. My friend Vadim I. Utkin (sketch on friendship and some photos from private archives**)**, *Int J Robust Nonlinear Control*. 2018, pp. 1–7.
26. Cesar U. Solis, Julio B. Clempner and **Alexander S. Poznyak**. Extremum seeking by a dynamic plant using mixed integral sliding mode controller with synchronous detection gradient estimation. *Int J Robust Nonlinear Control*. 2018, pp. 1–13, DOI: 10.1002/rnc.4408.
27. Jonny Fernando Barreto Castañeda, Fausto Jarquín Zárate, **Martha Rzedowski**, **Gabriel Villa Salvador**, Abelian p–extensions and Additive Polynomials, *International Journal of Mathematics,* (2017) Vol. 28, no. 14, 1750100-1–1750100-32. *Nota: No reportado el año anterior.*
28. Fausto Jarquín Zárate, **Martha Rzedowski**, **Gabriel Villa Salvador**, Genus Formulas for Abelian p–Extensions, *Rocky Mountain Journal of Mathematics*, (2018) Vol. 48, no. 6, 1905–1915.
29. Jonny Fernando Barreto, Carlos Montelongo Vázquez, Carlos Daniel Reyes Morales, **Martha Rzedowski Calderón**, **Gabriel Villa Salvador**, Genus Fields of Abelian Extensions of Congruence Rational Function Fields II, *Rocky Mountain Journal of Mathematics*, (2018) Vol. 48, no. 7, 2099–2133.
30. S. Celikovsky, **J. A. Torres-Muñoz**, and A. R. Dominguez-Bocanegra, "Adaptive high gain extensión and its application to bioprocess monitoring", *Kybernetika*, vol 54, no 1, pp 155-174, (2018)
31. J. Guerrero, **J. Torres**, V. Creuze and A. Chemori, "Trajectory tracking for autonomous underwater vehicle: An adaptive approach", *Ocean Engineering*, Volume 172, 15 January 2019, Pages 511-522.
32. J. Guerrero, **J. Torres**, E. Antonio and E. Campos "Autonomous Underwater Vehicle Robust Path Tracking: Generalized Super-Twisting Algorithm and Block Backstepping Controllers", *Control Engineering and Applied Informatics*, Vol.20, No.2 pp. 51-63, 2018.
33. Jian Tang, Junfei Qiao, ZhiWei Wu, Tianyou Chai, Jian Zhang, **Wen Yu,** Vibration and acoustic frequency spectra for industrial process modeling using selective fusion multi-condition samples and multi-source features, *Mechanical Systems and Signal Processing*, Vol.99, No.15, 142-168, 2018
34. Satyam Paul, **Wen Yu,** Xiaoou Li, Bidirectional active control of structures with type-2 fuzzy PD and PID, *International Journal of Systems Science*, Vol.49, No.4, 766-782, 2018
35. Qiumei Cong, **Wen Yu**, Integrated soft sensor with wavelet neural network and adaptive weighted fusion for water quality estimation in wastewater treatment process, *Measurement*, Vol.124, August 436-446, 2018
36. Satyam Paul, **Wen Yu,** A method on bidirectional active control of structures, *Journal of Vibration and Control*, Vol.24, No.15, 3400-3417, 2018
37. Raheleh Jafari, **Wen Yu**, Xiaoou Li, Numerical solution of fuzzy equations with Z-numbers using neural networks, *Intelligent Automation and Soft Computing*, Vol.24, No.1, 152-158, 2018

38. Jian Tang, Junfei Qiao, Jian Zhang, Zhiwei Wu, Tianyou Chai, **Wen Yu,** Combinatorial optimization of input features and learning parameters for decorrelated neural network ensemble-based soft measuring model, *Neurocomputing*, Volume 275, Pages 1426-1440, 2018

Publicados en otras revistas

1. Eli A. Vazquez and **J. Collado.** "Finite Dimensional Approximation of the Monodromy Operator of a Periodic Delay Differential Equation with Piecewis Constant Orthonormal Functions". *Applied Mathematics*, 2018, Vol.9, pp. 1315-1337
2. **Juan Carlos Martínez-García**. Salud humana, biología de sistema y estética. 2018/9. 127-128. *Revista Ciencias. Facultad de Ciencias de la Universidad Nacional Autónoma de Méxic*o. ISSN 0187-6376
3. Santos, Pablo, **Juan Manuel Ibarra Zannatha,** Alex. "Proyecto DroMA: Modelado, Control y Percepción para Drones Multirrotor Autónomos". *Komputer Sapiens, Sociedad Mexicana de Inteligencia Artificial*. 2018.

Publicados en extenso en memorias de congresos internacionales, con arbitraje.

IFAC Conf. on Modelling, Identification and Control of Nonlinear Systems, Guadalajara, México, 20 – 22 junio (2018)

1. Emmanuel Rocha, Jaime A. Moreno y **Fernando Castaños**. "Homogeneous generalisation of the Lur'e problem and the circle criterion. pp. 514 – 519.
2. **Alejandro J Malo Tamayo** Cesar A. Villaseñor Ríos, **Juan Manuel Ibarra Zannatha,** Santos M. Orozco Soto. Quadrotor Input-Output Linearization and Cascade Control
3. Escobar Jesica and **Alexander Poznyak**. Parameter estimation in continuous-time stochastic systems with correlated noises using the Kalman filter and Least Squares Method
4. Najmeh Keshtkar, Sajjad Keshtkar, Jaime A. Moreno, **Alexander Poznyak** and Hirohisa Kojima. LMI-Based Sliding Mode Control of an Underactuated Control Moment Gyroscope System
5. Mariana Ballesteros-Escamilla, Isaac Chairez, Vladimir G. Boltyanski and **Alexander Poznyak**. Realization of robust optimal control by dynamic neural-programming
6. Sánchez R. Bonifacio, Ordaz O. Patricio **Poznyak G. Alexander**. Robust Stabilizing Control for the Electromechanical Triple-Link Inverted Pendulum System
7. T. Poznyak, I. Chairez, **A. Poznyak.** State Estimation of Catalytic Ozonation by Differential Neural Networks with Discontinuous Learning Law
8. Guerrero, E. Antonio, E. Manzanilla, **J.A. Torres-Muñoz** and R. Lozano, "Autonomous Underwater Vehicle Robust Path Tracking: Auto-Adjustable Gain High Order Sliding Mode Controller"
9. Jesus Gonzalez, **Wen Yu**, Non-linear system modeling using LSTM neural networks
10. Satyam Paul, **Wen Yu,** Raheleh Jafari, A method for bidirectional active vibration control of structure using discrete-time sliding mode

European Control Conference, Limasol, Chipre, 12 – 15 junio (2018)

11. **M. Bonilla**, M. Malabre, V. Azhmyakov. "Advances of Implicit Description Techniques in Modelling and Control of Complex Systems".Workshop 2 : Structural Methods in the Study of Complex Systems.
12. Dmitry Gromov, **Fernando Castaños** y Alexander L. Fradkov**. "**Projected dynamics of constrained Hamiltonian systems". pp. 1277 – 1281.

3rd IFAC Conference on Advances in Proportional-Integral-Derivative Control, Ghent, Bélgica, 9 a 11 de mayo

(2018)

13. **Rubén Garrido**, J. Luis Luna. On the equivalence between PD+DOB and PID controllers applied to servo drives., 95-100.
14. M. A. Hernández Pérez, B. del Muro Cuéllar, D.F. Novella Rodríguez, M. Velasco Villa, **R. A. Garrido Moctezuma**. Modified PI controller for the stabilization of high-order unstable delayed systems with complex conjugate poles and a minimum phase zero. 426-431.

15th International Conference on Electrical Engineering, Computing Science and Automatic Control CCE. Ciudad de México, México, 5 a 7 de septiembre (2018).

15. Kevin López, Sabine Mondié, **Rubén Garrido**. Two delay-based nonlinear controllers and their tuning methods.
16. Luis Luna, **Rubén Garrido**. Position control of a linear ultrasonic motor: An active disturbance rejection approach.
17. Jessica Maldonado, **Rubén Garrido,** Gerardo Castro. A Methodology to Teach Mechatronics through Building a Hands-on Platform
18. Alexis A. Ortiz Olvera, **Juan Manuel Ibarra Zannatha**. Free leg impulse for extra weigth lifting humanoid walk.
19. Viridiana Yatzen Hernández Márquez, Rafael Stanley Núñez Cruz**, Juan Manuel Ibarra Zannatha**, Carlos Enríquez Ramírez. Optimal trajectories generation for autonomous navigation tasks in mobile robots.
20. Alberto-Isaac Pérez-Sanpablo, Elisa Romero Avila, Alicia Meneses Peñaloza, Catherine Disselhorst-Klug, Sebastian Becker, **Juan Manuel Ibarra Zannatha**, Position-Velocity Categorization of Time-Frequency Coherence for the Analysis of Muscle Coordination Dynamics of Elbow Joint During Low Force Movements in Healthy Childen
21. Cesar Alejandro Villaseñor Ríos, **Alejandro J Malo Tamayo,** Longitudinal Model Parameter Estimation of a Small Aircraft
22. Sergio Delfin Prieto, **Rafael Martínez-Guerra**, Ivan Trejo-Zuñiga, Robust state-estimation for fractional-order Liouvillian Systems
23. **Rafael Martínez-Guerra**, Juan Pablo Flores, Synchronization for a Class of nondiferentially flat chaotic Systems by means of a PI Observer
24. L. Juárez and **S. Mondié**, Lyapunov matrices for the stability analysis of a system with state and input delays and dynamic predictor control,
25. S.M. Dominguez-Nicolas, **P. Wiederhold:** Indentation image analysis for Vickers hardness testing
26. Salvador Ortiz, **Wen Yu**, Erik Zamora, Sliding mode three-dimension SLAM with application to quadrotor helicopter,
27. Guillermo Puriel, **Wen Yu**, Humberto Sossa, Reinforcement learning compensation based PD control for inverted pendulum
28. Edgar Estrada, **Wen Yu**, Stable PD position/force control in bilateral teleoperation, 15th International Conference on Electrical Engineering

BMT 2018: 52th Annual Conference of the German Society for Biomedical Engineering. Aachen, Germany, 26-28 September 2018

29. Elisa Romero Avila, Alberto Isaac Pérez Sanpablo, Catherine Disselhorst-Klug, **Juan Manuel Ibarra Zannatha**. sEMG-based differentiation of muscular activation patterns in children and adults during elbow movements.
30. Alberto-Isaac Pérez-Sanpablo, Elisa Romero Avila, Alicia Meneses Peñaloza, Maria-Elena Arellano-Saldaña Catherine Disselhorst-Klug, Josefina Gutierrez-Martinez, **Juan Manuel Ibarra Zannatha**. Interaction of synergistic and antagonistic muscles of elbow joint during activities of daily living in healthy children
31. Alberto-Isaac Pérez-Sanpablo, Elisa Romero Avila, Alicia Meneses Peñaloza, Maria-Elena Arellano-Saldaña Catherine Disselhorst-Klug, Josefina Gutierrez-Martinez, **Juan Manuel Ibarra Zannatha**.

Differences between muscle control of computational musculoskeletal models and healthy children during elbow flexion and extension movements

32. **Juan Manuel Ibarra Zannatha**, Santos Miguel Orozco Soto. Application of Engineering control strategies into medical field.
33. Alberto-Isaac Pérez-Sanpablo, Elisa Romero Avila, Alicia Meneses Peñaloza, Maria-Elena Arellano-Saldaña, Catherine Disselhorst-Klug, Josefina Gutierrez-Martinez, **Juan Manuel Ibarra Zannatha**. Proposal of a functional assessment battery for elbow functionality for the design and evaluation of assistive technology for children with spastic cerebral palsy.

International Conference of Systems Biology (ICSB'2018), Lyon, France, October 28-November 1, 2018

34. Eduardo CHAIREZ-VELOZ, José Luis CALDU-PRIMO, Jose DAVILVELDERRAIN, **Alberto SORIA-LOPEZ**, Elena R. ÁLVAREZ-BUYLLA, **Juan Carlos MARTINEZ-GARCÍA** (2018): Controllability analysis of the core gene regulatory network underlying epitelial-to-mesenchymal transition in the context of epitelial cáncer. International Conference of Systems Biology 2019
35. Eduardo CHAIREZ-VELOZ, Elizabeth ORTIZ-GUTIÉRREZ, José Luis CALDU-PRIMO, Elena R. ÁLVAREZ-BUYLLA, **Juan Carlos MARTINEZ-GARCÍA** (2018): Exploring cell cycle gene regulatory network dynamics through the algebraic anañysis of its structural reachability properties.
36. Eduardo CHAIREZ-VELOZ, Carolina Elva CHÁVEZ-HERNÁNDEZ, **Alberto SORIA-LÓPEZ**, Elena R. ÁLVAREZ-BUYLLA, **Juan Carlos MARTINEZ-GARCÍA** (2018): Identification of gene morphogenetic activity functionalities through reachability analysis: the Arabidopsis thaliana morphogenesis case.

American Control Conference (ACC), Wisconsin Center, Milwaukee, USA, Sept. 20-22, pp. 6566-6571, 2018

37. M. Ramírez-Neria, Z. Gao, H. Sira-Ramirez, **R. Garrido-Moctezuma** and A. Luviano-Juarez. Trajectory Tracking for an Inverted Pendulum on a Cart: An Active Disturbance Rejection Control Approach.
38. Oscar Martinez, Fidel Melendez-Vazquez ,**Rafael Martínez-Guerra**, Fractional-Order Nonlinear Systems with Fault Tolerance,
39. Evan Trejo-Zuñiga, Sergio Delfin Prieto, **Rafael Martínez-Guerra**, Closed-Loop asymptotic stability for a N-alpha differentiator by means of a Fractional dynamical Control

14th IFAC Workshop on time delay systems, June 28-30, Budapest, Hungary, 2018

40. Marco A. Gomez, Alexey V. Egorov, **Sabine Mondié**, A new stability criterion for neutral-type systems with one delay,
41. Kevin López, **Sabine Mondié**, **Rubén Garrido**, A tuning procedure for the Cascade Proportional Integral Retarded Controller
42. **Sabine Mondié**, Alexey V. Egorov, Marco A. Gomez, Stability conditions for time delay systems in terms of the Lyapunov matrix

IEEE Conference on Decision and Control (CDC18), Miami, Florida, December 17-19, 2018

43. L. Juárez and **S. Mondié**. "Lyapunov matrices for the stability analysis of a multiple distributed time-delay system with piecewise-function kernel", pp. 6216-6221.
44. Reynaldo Ortiz, **Sabine Mondié**, Saul del Valle, and Alexey Egorov, Construction of Delay Lyapunov Matrix for Integral Delay Systems, 5439-5444

45. Dmitry Gromov and **Fernando Castaños. "**Control of driftless systems using piecewise constant inputs". *SCIE International Symposium on Control Systems 2018*, Tokio, Japón, 9 -- 11 marzo (2018), pp. 226 –

46. Arturo Díaz Ponce, **Rubén A. Garrido Moctezuma**, Manuel I. Peña-Cruz, Luis V. Coronado, Iván Salgado Tránsito, Fernando Martell, Samantha A. Cajero Rodríguez. Towards the development of a low-cost high precision instrumented mini solar sensor. *19th International Symposium on Optomechatronic Technology ISOT 2018*, Cancún, México, 5 a7 de noviembre (2018): 148-149.
47. Kevin López, Sabine Mondié, **Rubén Garrido.** A tuning procedure for the cascade proportional integral retarded controller. *14th IFAC Workshop on Time Delay Systems TDS 2018*. Budapest, Hungría. 28 a 30 de junio (2018): 61-65.
48. J. Luis Luna, Jessica Maldonado, **Rubén Garrido**. Active Disturbance Rejection Control Applied to a Low-Cost Educational Prototype. Proceedings of the *XVIII Latin American Conference in Automatic Control CLCA 2018*. Quito, Ecuador, 24 a 26 de octubre (2018): 93-94.
49. Yves Pérez D., **Rubén Garrido**, Arturo Díaz. Modelling and control of a two-axis solar tracking system. *19th International Symposium on Optomechatronic Technology ISOT 2018*, Cancún, México, 5 a7 de noviembre (2018): 148-149..
50. **Alejandro J Malo Tamayo** Cesar A. Villaseñor Ríos, **Juan Manuel Ibarra Zannatha**, Santos M. Orozco Soto. Multirotor Modeling & Quadrotor Control Flow Diagram Matrix Based Control. *IASTED International Conference on Intelligent Systems and Control ISC 2018*. July 16 – 17, 2018, Calgary, Alberta, Canada
51. Alberto-Isaac Pérez-Sanpablo, Elisa Romero Avila, Alicia Meneses Peñaloza, **JM Ibarra Zannatha**, Catherine Disselhorst-Klug, Arturo Gonzalez. Differences between Musculoskeletal Simulation and Surface EMG on Time-Frequency Coherence of Elbow Muscles during Flexion and Extension Movements on Healthy Children. *40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'18*) at the Honolulu, HI, USA, on July 17-21, 2018.
52. Alberto I. Pérez Sanpablo, Santos M. Orozco Soto, Pablo Vera Bustamante, **J.M. Ibarra Zannatha,** Alicia Meneses Peñaloza, María E. Arellano Saldaña, Carlos Cifuentes García. Relevance for healthcare professionals and parents of design criteria of robotic orthotic devices for upper limb of children with spasticity. *RAR 2018 Bogotá*, Colombia, June 12th, 2018.
53. Sergio Delfin Prieto, Ivan Trejo-Zuñiga, **Rafael Martínez-Guerra,** Javier Montesinos-Garcia, "A robust state estimation for fractional-order Liouvillian Systems:With Applications to Secure Communications", *5th IFAC Conference on Analysis and Control of Chaotic Systems (IFAC-CHAOS)*, Eindhoven, The Netherlands, Oct. 30-Nov. 1, pp. 90-95, 2018.
54. T**.** Poznyak**,** I. Chairez and **A. Poznyak**. Estimation of Contaminants Decomposition in Solid Phase with Ozone by Differential Neural Networks with Discontinuous Learning Law. 15th International Workshop on Variable Structure Systems (VSS), Graz University of Technology, Graz, Austria, July 9-11, 2018, pp. 291-296
55. Xiaoou Li, **Wen Yu,** Hybrid Fuzzy Petri Nets and Neural Networks Framework for Modeling Critical Infrastructure Systems, *IEEE International Conference on Fuzzy Systems (FUZZY18)*, Rio de Janeiro, Brazil, 604-609, 2018
56. Erick Lopez, **Wen Yu**, Xiaoou Li, A Haptic Bilateral Robots System for Wrist Rehabilitation after Stroke, *14th IEEE International Conference on Automation Science and Engineering (CASE18),* Munich, Germany,130-135, 2018
57. Salvador Ortiz, **Wen Yu**, Erik Zamora, Sliding mode SLAM for robust simultaneous localization and mapping, *44th Annual Conference of the IEEE Industrial Electronics Society (IECON18)*, Washington DC, USA, 5674-5679, 2018

Publicados en extenso en memorias de congresos locales, con arbitraje.

Congreso Nacional de Control Automático 2018, San Luis Potosí, México, Octubre 10-12, 2018

1. R. Cortez-Vega, **Rubén Garrido.** Identificación paramétrica de un motor de CD utilizando el algoritmo de evolución diferencial. 90-95.
2. L. Juárez and **S. Mondié**. ”Lyapunov matrices for the stability analysis of a multiple distributed time-delay system with repeated piecewise function kernel”

3. **Rafael Martínez-Guerra**, Juan Pablo Flores-Flores, "Sincronizacion de una Clase de Sistemas Caoticos No diferencialmente Planos mediante un Observador PI ",

XX Congreso Mexicano de Robótica COMROB XX, Ensenada, Baja California, 8 al 10 de septiembre, 2018

4. Luis Luna, **Rubén Garrido.** On the equivalence between P+DOB and set point weighted PI controllers for velocity control of servodrives under load disturbances. Memorias del: 73-78.
5. Jessica Maldonado, Kevin Lopez, **Ruben Garrido,** Sabine Mondié. Implementing Time-delay Controllers on an Educational Motion Control Platform. 321-326.

CoMRob 2018: XX Congreso Mexicano de Robótica de la AMRob. CICESE, Ensenada, BC, México. Del 12 al 14 de octubre de 2018.

6. **Juan Manuel Ibarra Zannatha,** Pablo Vera Bustamante, Andrés Cureño Ramírez, René de la Rosa Picazo. Generación de Trayectorias para Vehículos Autónomos. Pag. 176-182.
7. Santos Miguel Orozco Soto, Pablo Vera Bustamante, **Juan Manuel Ibarra Zannatha.** ORB-SLAM Based Active Disturbance Rejection Control for Quadrotor Autonomous Flight. Pag. 367-372.
8. Alexis A. Ortiz Olvera, **Juan Manuel Ibarra Zannatha**. Self-calibration stage for performance improvement of ground-foot contact force sensory systems. Pag 135-140.

Cartas al editor (Reseñas de Artículos):

Martha Rzedowski Calderón

1. Reseñas para la AMS (American Mathematical Association):
2. Enero de 2018 (3716496 Kodani,Morishita,Terashima;2018-04-17)
3. Marzo 2018 (3 732 881) Shende,Tsimermann;2018-05-04)
4. Mayo 2018 (3 780 037 Lachmann;2018-07-24)
5. Junio 2018 (3 725 250 Legrand;2018-08-24)

JORGE ALBERTO LEÓN VÁZQUEZ

6. León, J.A. Reseña de: Exponential convergence for some SPDEs with Lévy noises. Illinois J. Math. (2016), 60: 587-611pp, de Y. Song, T. Xu. En: Mathematical Reviews (2018-02-07). Número de reseña: MR3680550.
7. León, J.A. Reseña de: A white noise approach to insider trading. Let us use white noise (2017): 191-203pp, World Sci. Publ., Hackensack, NJ, de B. Oksendal, E.E. Rose. En: Mathematical Reviews (2018-04-26). Número de reseña: MR3588088.
8. León, J.A. Reseña de: Time fractional equations and probabilistic representation. Chaos Solitons Fractals (2017), 102: 168-174pp, de Z.-Q. Chen. En: Mathematical Reviews (2018-08-27). Número de reseña: MR3672008.
9. León, J.A. Reseña de: Quadratic BSDE with L2-terminal data: Krylov's estimate, Itô-Krylov's formula and existence results. Ann. Probab. (2017), 45: 2377-2397pp, de K. Bahlali, M. Eddahbi, Y. Ouknine. En: Mathematical Reviews (2018-02-12). Número de reseña: MR3693965.
10. León, J.A. Reseña de: Lévy processes and Lévy white noise as tempered distributions. Ann. Probab. (2017), 45: 4389-4418pp, de R.C. Dalang, T. Humeau. En: Mathematical Reviews (2018-05-09). Número de reseña: MR3737914.
11. León, J.A. Reseña de: Stochastic partial differential equations: a rough paths view on weak solutions via Feynman-Kac. Ann. Fac. Sci. Toulouse Math. (2017), 4: 911-947pp, de J. Diehl, P.K. Friz, W. Stannat. En: Mathematical Reviews (2018-07-03). Número de reseña: MR3746646.
12. León, J.A. Reseña de: Extensions of the Hitsuda-Skorokhod integral. Communications on Stochastic Analysis (2017), 4: 479-490pp, de P. Parczewski. En: Mathematical Reviews (2018-10-08). Número de reseña: MR3783231.
13. León, J.A. Reseña de: Optimal approximation of Skorohod integrals. Journal of Theoretical Probability (2018), 31: 206-231pp, de A. Neuenkirch, P. Parczewski. En: Mathematical Reviews (2018-08-07).

Número de reseña: MR3769812.

Capítulos de investigación original en extenso en libros especializados publicados por una casa editorial.

1. **M. Joaquin Collado** "Hill Equation: From 1 to 2 Degrees of Freedom" In: J.B. Clempner and W. Yu (eds.), *New Perspectives and Applications of Modern Control Theory*, Springer-Verlag, 2018. https://doi.org/10.1007/978-3-319-62464-8_3, pp. 43-71.

2. **J.M. Ibarra Zannatha**, Alberto Isaac Pérez Sanpablo et al. Capítulo 14 Robótica en Ingeniería Biomédica en Maria Chiara Carrozza, Silvestro Micera, José L. Pons (Editors). *Wearable Robotics: Challenges and Trends*. Proceedings of the 4th International Symposium on Wearable Robotics, WeRob2018, October 16–20, 2018, Pisa, Italy. Volume 22 Springer Series Biosystems & Biorobotics, Eugenio Guglielmelli Series editor
3. M.A. Ramírez-Moreno, S.M. Orozco-Soto, **J.M. Ibarra-Zannatha**, and D. Gutiérrez. Development of a Semi-Autonomous BCI based on Artificial Vision for Object Manipulation with a Robotic Arm. Pag. 187-191
4. Alberto Isaac Perez Sanpablo, Catherine Disselhorst-Klug, **Juan Manuel Ibarra** Zannatha, Josefina Gutiérrez-Martínez, Alicia Meneses Peñaloza, Elisa Romero-Avila and Santos Miguel Orozco-Soto. One degree of freedom wearable exoskeleton for children with spasticity. Pag. 192-195
5. Santos M. Orozco Soto, Alberto Isaac Pérez Sanpablo, Pablo Vera Bustamante and **Juan Manuel Ibarra Zannatha**. Visual-Inertial Motion Tracking System for Spasticity Evaluation. Pag. 210-215, Röber, Bernd (Eds.), *Plant Gene Regulatory Networks: Methods and Protocols*, 297-315. Springer New York. ISBN 978-1-4939-7125-1.

6. **Alex S. Poznyak**. Chapter 3. Stochastic Sliding Mode Control and State Estimation.. In *Advances in Variable Structure Systems and Sliding Mode Control Theory and Applications* (Eds. Shihua Li, Xinghuo Yu, Leonid Fridman, Zhihong Man and Xiangyu Wang). *Seies: Studies in Systems, Decision and Control*, Volume 115, Springer, 2018, pp. 57-100. Springer International Publishing AG 2018. DOI 10.1007/978-3-319-62896-7_3.

7. **Alexander S. Poznyak**. Dr. Alexander Semionovich Poznyak Gorbatch: Biography. Chapter 1, pp.1-24. Springer International Publishing AG 2018, J.B. Clempner and W. Yu (eds.), *New Perspectives and Applications of Modern Control Theory*, DOI 10.1007/978-3-319-62464-8_1.

8. **Wen Yu**, Luenberger Observer Design for Uncertainty Nonlinear Systems, 25-43, Julio Clempner and Wen Yu (Eds.), *New Perspectives and Applications of Modern Control Theory*, Springer, Berlin, 2018

Libros especializados que cubran el trabajo del investigador, publicados por una casa editorial reconocida.

1. Álvarez-Buylla Roces, M. E., **J. C.Martínez-García**, Davila-Velderrain, J., Domínguez-Huttinger, E., & Martínez-Sánchez, M. E. (2018). *Modeling Methods for Medical Systems Biology: Regulatory Dynamics Underlying the Emergence of Disease Processes*. Springer.
2. **Rafael Martínez-Guerra**, Claudia Alejandra Perez-Pinacho, *Advances in Synchronization of coupled fractional order Systems, Fundamentals and Methods*, Editorial: Springer, ISBN: 978-3-319-93945-2, ISBN: 978-3-319-93946-9, ISSN:1860-0832, ISSN: 1860-0840 (electronic), 2018.
3. **Wen Yu,** *PID Control with Intelligent Compensation for Exoskeleton Robots*, Academic Press, 2018

Libros de texto publicados por una casa editorial reconocida, utilizados por terceros.

1. Roger Miranda Colorado, **Ruben Garrido**, Luis T. Aguilar, José Ernesto Herrero. *Drones: Modelado y Control de Cuadrotores.* Alfa Omega Grupo Editor. Primera Edición. ISBN: 978-607-538-314-9.

Resúmenes de participación en congresos

Martha Rezdowski Calderon

Sobre la teoría de géneros
Encuentro de sociedades de matemáticas de Colombia y México
Instituciones: Sociedad Matemática Mexicana y Sociedad Colombiana de Matemáticas
Fecha: 1 de junio de 2018
Lugar: Universidad del Norte
Barranquilla, Colombia
Coautores: Myriam Maldonado Ramírez y Gabriel Villa Salvador

Campos Ciclotómicos
Primera escuela de verano en aritmética, análisis p-ádico y física matemática en honor al Dr. Víctor S. Albis G.
Fecha: 6 de junio de 2018
Lugar: Universidad Javeriana
Bogotá, Colombia
Coautor: Gabriel Villa Salvador

Capítulos de investigación original en extenso en libros especializados, publicados por una casa editorial reconocida

Davila-Velderrain, J., Caldu-Primo, J. L., **Martinez-Garcia, J. C.,** & Alvarez-Buylla, E. R. (2018). Modeling the Epigenetic Landscape in Plant Development. *In Computational Cell Biology* (pp. 357-383). Humana Press, New York, NY.

ESTUDIANTES GRADUADOS

MAESTRÍA

1. *Jorge Tlacaelel Cruz*

Título de tesis: Estabilidad de la ecuación de Hill. Un enfoque de Sturm-Liouville
Especialidad: Control Automático
Director de tesis: **Dr. Joaquín Collado Moctezuma**
Fecha de obtención de grado: 24/09/2018

2. *Yves Jesús Pérez Delgado***.**
Título de tesis: Modelado y Control de un sistema de seguimiento solar.
Especialidad: Control Automático.
Director de tesis: **Rubén Alejandro Garrido Moctezuma.**
Fecha de obtención de grado: 13/12/2018.

3. *Cesar Alejandro Villaseñor Ríos***.**
Título de tesis: Estimación de Parámetros Aerodinámicos de un Aeroplano,
Especialidad: Control Automático.
Director de tesis: **Alejandro J. Malo Tamayo.**
Fecha de obtención de grado: 02/03/2018.

4. Juan Pablo Flores Flores
Tesis: Sincronizacion generalizada de Sistemas No diferencialmente Planos y de Liouville
Director de Tesis: **Rafael Martínez-Guerra**
Fecha de Obtencion: 30 Agos/2018.

5. Reynaldo Ortiz Pérez
Tesis: Matriz de Lyapunov de ecuaciones integrales y su construcción
Director de Tesis: **Sabine Mondié Cuzange**
Fecha de Obtencion: 26 Agos/2018.

6. ALEJANDRA HERNANDEZ SANCHEZ
Tesis: DENTIFICACION DE PARÁMETROS DE SISTEMAS HAMILTONIANOS POR MEDIO DE PRIMERAS INTEGRALES
Director de Tesis: **Alexander Pozniak Gorbatch**
Fecha de examen final: 24 DE AGOSTO 2018**.**

7. DAVID VELAZQUEZ FLORES
Tesis: OBSERVADOR TIPO MODOS DESLIZANTES PARA SISTEMAS NO LINEALES EN TIEMPO DISCRETO CON RUIDOS ESTOCÁSTICOS.
Director de Tesis: **Alexander Pozniak Gorbatch**
Fecha de examen final: 31 DE AGOSTO 2018.

DOCTORADO

1. *Carlos Alberto Franco Tello*
   Título de tesis: El discriminante de la ecuación de Hill: aproximación y aplicaciones
   Especialidad: Control Automático
   Director de tesis: **Dr. Joaquín Collado Moctezuma**
   Fecha de obtención de grado: 23/03/2018

2. *José Guillermo Rodríguez Servín*
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   Especialidad: Control Automático
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   Fecha de obtención de grado: 18/04/2018.

3. *Aurora Rodríguez Martínez*
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   Director de tesis: **Dr. Joaquín Collado Moctezuma**
   Fecha de obtención de grado: 26/04/2018

4. *Eli Abraham Vazquez Orduna*
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   Fecha de obtención de grado: 13/12/2018.

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   Fecha de Obtencion: 24 Agos/2018.

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   Fecha de Obtencion: 24 Agos/2018

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   Tesis: Comunicaciones Seguras en Sistemas caóticos de orden entero y
   fraccional: Un enfoque de Criptografia
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   Fecha de Obtencion: 14 Dic/2018

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9. *Marco Antonio Gómez Álvarez*
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   Fecha de Obtencion: 14 /02/2018.

10. *Jonny Fernando Barreto Castañeda*
    Título de la tesis: Campos de géneros de p-extensiones elementales abelianas
    Fecha: 25 de julio de 2018,
    Director de tesis: **Dra. Martha Rzedowski Calderon**

11. *Kristal Karina Trejo Palacios*.

Título de tesis: Soluciones Para Juegos Cooperativos y no Cooperativos con cadenas de Markov. . Directores de tesis: **Dr. Alexander Pozniak** y Dr. Julio Clempner.

Fecha de obtención de grado: 7 DE DICIEMBRE 18.

12. *Saúl M. Domínguez Nicolás*
    Título de tesis: Adquisición y procesamiento digital de imágenes microscópicas provenientes de pruebas de dureza Vickers
    Especialidad: Control Automático
    Director de tesis: **Dra. Petra Wiederhold Grauert**
    Fecha de obtención de grado: 29/11/2018

13. *Carlos Parga*
    Título de tesis: Diseño de un exoesqueleto para hombro humano y controlado por su modelo de movimiento
    Director de tesis: **Dr. Wen Yu Liu**
    Fecha de obtención de grado: 12/04/2018

14. *Erick de la Rosa*
    Título de tesis: Máquinas restringidas de Boltzmann para el modelado de sistemas no lineales
    Director de tesis: **Dr. Wen Yu Liu**
    Fecha de obtención de grado: 12/05/2018

Cursos Obligatorios

1. Teoría de Control II, **Joaquín Collado M.**
2. Introducción a la Robótica, **Alberto Soria López**
3. Control Óptimo, **Alexander Pozniak Gorbatch**
4. Control robusto, **Fernando Castaños**
5. Teoría de control III, **Rafael Martínez Guerra**
6. Álgebra lineal y ecuaciones diferenciales, **Cristóbal Vargas Jarillo**
7. Modelado y simulación, **Juan Carlos Martínez**
8. Teoría de control I, **Rubén A. Garrido Moctezuma**, **Moisés Bonilla Estrada**

Cursos propedéuticos

Análisis real	**Gabriel Villa Salvador**
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Control clásico	**Moisés Bonilla Estrada**