

PRODUCTOS DE INVESTIGACIÓN Y DESARROLLO - 2021

a) Publicados en las revistas JCR (no incluye "in Press")

1. Velázquez D, **Poznyak A.** Attractive ellipsoid design for robust sliding-mode observation error in stochastic nonlinear discrete-time systems. *Int J Robust Nonlinear Control*. 2021; 31: 69-86.
2. Alejandra Hernández-Sánchez, **Alexander Poznyak**, Isaac Chairez, Olga Andrianova, Robust 3-D autonomous navigation of submersible ship using averaged sub-gradient version of integral sliding mode, *Mechanical Systems and Signal Processing*, Volume 149, 2021.
3. **A. S. Poznyak**, A. V. Nazin and H. Alazki, "Integral Sliding Mode Convex Optimization in Uncertain Lagrangian Systems Driven by PMDC Motors: Averaged Subgradient Approach," *IEEE Transactions on Automatic Control*, vol. 66, no. 9, pp. 4267-4273, Sept. 2021
4. **Alexander S. Poznyak**, Hussain. Alazki, Hisham M. Soliman, Invariant-set design of observer-based robust control for power systems under stochastic topology and parameters changes, *International Journal of Electrical Power & Energy Systems*, Volume 131, 2021.
5. Mariana Ballesteros, Andrey Polyakov, Denis Efimov, Isaac Chairez, **Alexander S. Poznyak**, Non-parametric identification of homogeneous dynamical systems, *Automática*, Volume 129, 2021.
6. Hernandez-Sanchez, A., Chairez, I., **Poznyak, A.** and Olga Andrianova. Dynamic Motion Backstepping Control of Underwater Autonomous Vehicle Based on Averaged Sub-gradient Integral Sliding Mode Method. *J Intell Rob Syst*, 103, 48 (2021).
7. C. U. Solis, J. B. Clempner & **A. S. Poznyak** (2021) Robust integral sliding mode controller for optimization of measurable cost functions with constraints, *International Journal of Control*, 94:6, 1651-1663, 2021.
8. David Cruz-Ortiz, Isaac Chairez, **Alexander Poznyak**, Non-singular terminal sliding-mode control for a manipulator robot using a barrier Lyapunov function, *ISA Transactions*,: 2021-04-09.
9. Clempner, J.B.; **Poznyak, A.S.** Analytical Method for Mechanism Design in Partially Observable Markov Games. *Mathematics*, 2021, 9, 321.
10. **Fernando Castaños**, **Sabine Mondié**. Observer-based predictor for a susceptible-infectious-recovered model with delays: An optimal-control case study. *Int. J. Robust Nonlinear Control*, 31:5118 - 5133, julio 2021.
11. Marco Tulio Angulo, **Fernando Castaños**, Rodrigo Moreno-Morton, Jorge X. Velasco-Hernández y Jaime A. Moreno. A simple criterion to design optimal non-pharmaceutical interventions for mitigating epidemic outbreaks. *Journal of the Royal Society Interface*, 18(178), 20200803, 2021.
12. Carlos Daniel Reyes Morales, **Gabriel Villa Salvador**, Genus Fields of Kummer l^n -cyclic Extensions, *International Journal of Mathematics*, Vol. 32, no. 9 (2021).

13. **Rafael Martínez-Guerra**, J. P. Flores-Flores, “An Algorithm for the Robust Estimation of the COVID-19 Pandemic’s Population by considering Undetected Individuals” *Applied Mathematics and Computation*, Vol 405, 126273, pp. 1-21, 2021.
14. J. P. Flores-Flores, **Rafael Martínez-Guerra**, “Dynamical Distributed Control and Synchronization”, *Nonlinear Dynamics*, 103, 2, pp. 1663-1679, 2021.
15. . Flores-Flores, **Rafael Martínez-Guerra**, “Dynamical Distributed Controller for the Synchronization Problem of Integer and Fractional order Partial Differential Equations Systems, *Transactions of the Institute of Measurement and Control*, August 4, pp. 1-19, 2021.
16. **Rafael Martínez-Guerra**, J. P. Flores-Flores, A. Vargas-Govea, A Globally Mittag-Leffler bounded High-Gain Observer for Systems with Unknown Dynamics and Noisy Measurements, *ISA Transactions*, Pub Date : 2021-11-03
17. Héctor Araya, **Jorge A. León**, Soledad Torres. On local linearization method for stochastic differential equations driven by fractional Brownian motion. *Stochastic Analysis and Applications*, 39, 55-90, 2021.
18. Elisa Alós, **Jorge A. León**, An Intuitive Introduction to Fractional and Rough Volatilities, *Mathematics*, 9(9), 994; 2021.
19. **Jorge A. León** y David Márquez-Carreras. Semilinear fractional stochastic differential equations driven by a γ -Hölder continuous signal with $\gamma > 2/3$. *Stochastics and Dynamics* 21 (1), 2050039, 2021.
20. **J. A. Torres**, S. Celikovsky, A. Sonck and A R Dominguez, Constant-gain nonlinear adaptive observers revisited: an application to chemostat systems, *Front Inform Technol Electron Eng*, 2021 22(1):68-78.
21. E. Campos, E. F. Mendoza-Santos, **J. A. Torres-Muñoz**, E. RomanHernandez, V.I. Moreno-Oliva, Q. Hernandez-Escobedo and A J Perea-Moreno, Nonlinear Controller for the Set-Point Regulation of a Buck Converter System, *Energies*, 2021, 14, 5760.
22. Gratia Flores-Salgado, Guillermo Quijano, Miguel Vital-Jácome, Germán Buitrón, Santos Miguel Orozco Soto, Pablo Vera-Bustamante, **Juan Manuel Ibarra Zannatha**, Frédéric Thalasso. Novel photo-microrespirometric method for the rapid determination of photosynthesis–irradiance (PI) curves in microalgal-bacterial systems. *Algal Research-Biomass Biofuels and Bioproducts*, 58(3):102414, October 2021..
23. L.A. Blas, J. Davila, S. Salazar, **M. Bonilla**. "Robust Trajectory Tracking for an Uncertain UAV Based on Active Disturbance Rejection". *IEEE Control Systems Letters*, vol. 6, pp. 1466-1471, 2021.
24. Carlos Aguilar-Ibáñez, Belem Saldívar, Manuel Jiménez Lizárraga, Eloísa García-Canseco, **Rubén Garrido**. Parametric Uncertain Second-Order Linear System Output-Adaptive Stabilization: An Integral and MRCA Based Approach. *European Journal of Control* 2021, Vol. 57, enero, pp 76-81.
25. Erick Asiain, **Rubén Garrido**. Anti-Chaos Control of a Servo System Using Nonlinear Model Reference Adaptive Control. *Chaos, Solitons and Fractals*, 2021, Vol. 143, febrero, 110581.
26. **Ruben Garrido**, Luis Luna. Robust ultra-precision motion control of linear ultrasonic motors: A combined ADRC-Luenberger observer approach. *Control Engineering Practice*. Volume 111, June 2021, 104812
27. Mario Ramírez Neria, Hebertt Sira-Ramírez, **Rubén Garrido**, Alberto Luviano-Juárez, hiquiang Gao. Active Disturbance Rejection Control for Reference Trajectory Tracking Tasks in the Pendubot System. *IEEE ACCESS*, 2021, Vol. 9, pp 102663-102670.

28. Mario Ramírez-Neria, Zhiqiang Gao, Hebertt Sira-Ramírez, **Rubén Garrido-Moctezuma**, Alberto Luviano-Juárez. On the tracking of fast trajectories of a 3DOF torsional plant: A flatness based ADRC approach. *Asian Journal of Control*, 2021, Vol. 23, No. 3, p,p 1367-1379.
29. M. A. Gomez, A. V. Egorov and **S. Mondié**, Necessary and Sufficient Stability Condition by Finite Number of Mathematical Operations for Time-delay Systems of Neutral Type, in *IEEE Transactions on Automatic Control*, 66(6), 2802-2808, 2021.
30. Ortega, O. Santos and **S. Mondié**, Comments on the Bellman functional for linear time-delay systems, *Optimal Control, Applications and Methods*, 42(5), 1531-1540 2021.
31. Irina V. Alexandrova, **S. Mondié**, Necessary stability conditions for linear systems with incommensurate delays, *Automatica*, July 2021, 129(11):109628
32. Raheleh jafari, **Wen Yu**, Sina Razvarz, Alexander Gegov, Numerical methods for solving fuzzy equations: A Survey, *Fuzzy Sets and Systems*, Vol.404, 1-22, 2021
33. **Wen Yu**, Jesus Gonzalez, Xiaou Li, Fast Training of Deep LSTM Networks with Guaranteed Stability for Nonlinear System Modeling, *Neurocomputing*, Vol. 422, No.1, 85-94, 2021.
34. Erick García, **Wen Yu**, Xiaou Li, Optimum design of a parallel robot using neuro-genetic algorithm, *Journal of Mechanical Science and Technology*, Vol.35, No.1, 293-305, 2021
35. W.Wang, Y.Jia, **Wen Yu**, H.Pang, K.Cai, On-line Ammonia Nitrogen Measurement Using Generalized Additive Model and Stochastic Configuration Networks, *Measurement*, Vol.170, No.108743, 1-8, 2021
36. Adolfo Perrusquía, **Wen Yu**, Xiaou Li, Multi-agent Reinforcement Learning for Redundant Robot Control in Task-space, *International Journal of Machine Learning and Cybernetics*, 12(1), 231-241, 2021
37. Fernando Gomez, **Wen Yu**, Discrete-Time Tri-directional Active Control of Building Structures, *Engineering Structures*, Vol. 243, 112689, 2021
38. Jorge Morales, **Wen Yu**, Improving Neural Network's Performance Using Bayesian Inference, *Neurocomputing*, Vol. 461, 319-326, 2021
39. A. Ramírez, **Wen Yu**, X.Li, Fuzzy Identification of Systems based on Adaptive Neurons, *Journal of Intelligent & Fuzzy Systems*, Vol. 40, No. 6, 10767-10779, 2021
40. Adolfo Perrusquia, **Wen Yu**, Xiaou Li, Nonlinear Control Using Human Behavior Learning, *Information Sciences*, Vol.569, No.4, 358-375, 2021
41. Adolfo Perrusquia and **Wen Yu**, Continuous time reinforcement learning for robust control under worst-case uncertainty, *International Journal of Systems Science*, Vol.52, No.4, 770-784, 2021
42. Edgar Estrada, **Wen Yu**, Xiaou Li, Stable Bilateral Teleoperation with Phase Transition and Haptic Feedback, *Journal of the Franklin Institute*, Vol.358, No.3, 1940-1956, 2021
43. Adolfo Perrusquía and **Wen Yu**, Identification and Optimal Control of Nonlinear Systems Using Recurrent Neural Networks and Reinforcement Learning: An Overview, *Neurocomputing*, Vol.438, No.1, 143-154, 2021
44. J.Serrano, G.Fernández, S.Moreno, **Wen Yu**, New Results for Prediction of Chaotic Systems Using Deep Recurrent Neural Networks, *Neural Processing Letters*, 53, Vol 53, pages:1579--1596 (2021)
45. **Wen Yu**, Erick de la Rosa, Neural Modeling with Guaranteed Input-Output Probability Distributions, *IEEE Transactions on Systems, Man and Cybernetics: Systems*, VOL.51, NO.11, 6660-6668, 2021
46. J.Tang, H.Xia, J.Zhang, J.Qiao, **Wen Yu**, Deep Forest Regression based on Cross-Layer Full Connection, *Neural Computing and Applications*, VOL 33, pages: 9307-9328, 2021

47. Adolfo Perrusquia and **Wen Yu**, Discrete-time H2 Neural Control Using Reinforcement Learning, *IEEE Transactions on Neural Networks and Learning Systems*, VOL.32, NO.11, 4879-4889, 2021
48. Mario Maya, **Wen Yu**, Luciano Telesca, Neural Networks for Long-Term Earthquake Prediction Using Modified Meta-Learning, *Journal of Intelligent & Fuzzy Systems*, vol. 41, no. 6, pp. 6375-6388, 2021

b) Publicados en otras revistas.

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2. Ojeda, M.; Silva, H. & Soria, A.- “Ludibot: Interfaz humano-robot móvil para el aprendizaje lúdico de idiomas. *Ingeniería Investigación y Tecnología*. Vol. 22, N° 3, pp. 1-10. 2021.
3. Salvador Ortiz and **Wen Yu**, Autonomous Navigation in Unknown Environment Using Sliding Mode SLAM and Genetic Algorithm, *Intelligence & Robotics*, Vol. 1 No. 2, 116-135, 2021

c) Publicados en extenso en memorias de congresos internacionales.

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2. Carlos H. de la Cruz, **Jorge A Torres**, On Single and Double Loop PD Controllers for Depth Control of a Hybrid Autonomous Underwater Glider: Real-time evaluation, *IEEE OCEANS Conference*, San Diego-Porto, Septiembre 20-23, 2021.
3. Frédéric Mazenc, Javier E. Pereyra Zamudio, **Sabine Mondié**, Backstepping for Uncertain Nonlinear Systems with a Delay in the Control, *IFAC-PapersOnLine*, Volume 54, Issue 9, 758-763, *24th International Symposium on Mathematical Theory of Networks and Systems*, 2021, Cambridge, United Kingdom
4. Portilla, I. V. Alexandrova and **S. Mondié**, Estimates for weighted homogeneous delay systems: A Lyapunov-Krasovskii-Razumikhin approach, *American Control Conference (ACC)*, 2298-2303, 2021.
5. Salvador Ortiz, **Wen Yu**, Xiaou Li, Autonomous Navigation Using Robust SLAM and Genetic Algorithm, *17th IEEE International Conference on Automation Science and Engineering (CASE 2021)*, 1346-1351, Lyon, France, August 23-27, 2021
6. Jorge Mercado, **Wen Yu**, A novel Bayesian inference-based training method for time series forecasting, *IEEE International Conference on Systems, Man, and Cybernetics (SMC 2021)*, 909-913, Melbourne, Australia, 17-20 October, 2021.
7. Maya Mario, **Yu Wen**, Li Xiaou, Time series forecasting with missing data using neural network and meta-transfer learning, *2021 IEEE Symposium Series on Computational Intelligence (SSCI 2021)*, 1-6, Orlando, Florida, USA, December 4th - 7th 2021.
8. **Fernando Castaños** and Dmitry Gromov. Limit cycles in locally Hamiltonian systems with dissipation, páginas 201 – 206, *IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control*, Belín, Alemania, noviembre 2021
9. V. Azhmyakov, J.P. Arango, **M. Bonilla**. “Robust State Estimations in Controlled ARMA Processes with the Non-Gaussian Noises: Applications to the Delayed Dynamic”. ScienceDirect. *IFAC PapersOnLine* 54-20 (2021), pp. 334-339, *IFAC Modeling, Estimation and Control Conference (MECC 2021)*, Austin, Texas, USA, 24-27 October.

10. Ricardo Cortez, **Ruben Garrido**. Stable Tuning of Extended State Observers Using PSO and Penalty Functions, *2021 IEEE International Conference on Mechatronics and Automation*, Takamatsu, Japón, 8 a 11 de agosto 2021

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12. Reynaldo Ortiz, Alexey Egorov, **Sabine Mondié**, Integral Delay Systems: Necessary and Sufficient Stability Conditions in Terms of the Delay Lyapunov Matrix

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13. Ricardo Cortez, Yair Lozano, **Rubén Garrido**. Parameter identification from hybrid model using PSO and penalty functions.
14. Adolfo Perrusquia, **Rubén Garrido, Wen Yu**. An Input Error Method for Parameter Identification of a class of Euler-Lagrange Systems.
15. Andres Rodriguez-Torres, **Jesús Morales Valdez** and **Wen Yu**, Parametric identification of a magnetorheological damper based on Genetic Algorithm

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16. N.A. Aguillón, **M. Bonilla**, S. Salazar, M. Malabre, V. Azhmyakov. " On the Take-Off of a Single-Wing Quadrotor
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- 8 A.I. Pérez Sanpablo, Josefina Gutiérrez M., Alicia Meneses P., María E. Arellano S., Ivett Quiñones U., Gerardo Rodríguez R., **Juan M. Ibarra Zannatha**, Elisa Romero A., Catherine Disselhorst-Klug. Control Automático, Robótica en Rehabilitación: Dispositivo Robótico para mejorar la capacidad de movimiento de individuos pediátricos con espasticidad. Simposio de Investigación del INR. CDMX, México. 14 diciembre 2021

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5.2 PRODUCTOS DE DESARROLLO

5.2.2. Patentes Otorgadas

1. Hirojisa Kojima, Sajjad Keshtkar, **Alexander Poznyak**. Patent 6867634, Japan, “Attitude Control Device and Attitude Control Method”, April 28, 2021. <https://ipforce.jp/patent-jp-B9-6867634>
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- Catherine Disselhorst-Klug. *Sistema y método para la detección temprana de la aparición de Espasticidad, basado en un modelo para la relación entre la actividad muscular del músculo bíceps y la velocidad articular.*
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d) Reseña de artículos

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Gabriel Villa. Reseña del Artículo: Zbl 1457.11161 Kontogeorgis, Aristides; Ward, Jacob Kenneth, *Arithmetic actions on cyclotomic function fields*, J. Pure Appl. Algebra **225**, no. 1, artículo no, 106478, 25 páginas (2021).

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Gabriel Villa. Reseña del Artículo: Zbl 1472.11184 Asayama, Takuya, *Torsion points of Drinfeld modules over large algebraic extensions of finitely generated function fields*, J. Number Theory **226**, 358-372 (2021).

Gabriel Villa. Reseña del Artículo: Zbl 1472.11287 Kurlberg, Pär; Rosenzweig, Lior, *The Chebotarev density theorem for function fields - incomplete intervals*, Finite Fields Appl. **73**, artículo no. 101838, 15 páginas (2021).

Gabriel Villa. Reseña del Artículo: Zbl 07327161 Demangos, L.; Gendron, T. M., *Quantum modular invariant and Hilbert class fields of real quadratic global function fields*, Sel. Math., New Ser. **27**, no. 1, artículo no. 13, 25 páginas (2021).

Gabriel Villa. Reseña del Artículo: Zbl 07377375 Le, Huy Hung; Dac, Tuan Ngo, *On identities for zeta values in Tate algebras*, Trans. Am. Math. Soc. **374**, no. 8, 5623-5650 (2021).

Gabriel Villa. Reseña del Artículo: Zbl 07318730 Gekeler, Ernst-Ulrich, *On Drinfeld modular forms of higher rank V: the behavior of distinguished forms on the fundamental domain*, J. Number Theory **222**, 75-114 (2021).

Gabriel Villa. Reseña del Artículo: Zbl 07330395 Frantzen, Maïke Ella Elisabeth, *Non-openness of v-adic Galois representation for a-motives*, Int. J. Number Theory **17**, no. 1, 33-53 (2021).

León, J.A. Reseña de: Rough linear PDE's with discontinuous coefficients—existence of solutions via regularization by fractional Brownian motion. *Electron. J. Probab.* 25 (2020): Paper No. 34, 33pp, Nilssen; T. En: Mathematical Reviews (2021-02-03). Número de reseña: MR4089784.

León, J.A. Reseña de: Integration by parts formulae for the laws of Bessel bridges via hypergeometric functions. *Electron. Commun. Probab.* 25 (2020), Paper No. 46, 11 pp, Altman; H. E. En: Mathematical Reviews (2021-02-17). Número de reseña: MR4125793.

León, J.A. Reseña de: Gaussian fields and stochastic heat equations. *Differential Integral Equations* 33 (2020), no. 9-10, 527--554, Lototsky, S. V. y Shah, A. En: Mathematical Reviews (2021-03-30). Número de reseña: MR4149520.

León, J.A. Reseña de: Fluctuations of a nonlinear stochastic heat equation in dimensions three and higher. *SIAM J. Math. Anal.* 52 (2020), no. 6, 5422--5440, Gu; Y.y Li; J. En: Mathematical Reviews (2021-06-11). Número de reseña: MR4169750.

León, J.A. Reseña de: Classical and generalized solutions of fractional stochastic differential equations. *Stoch. Partial Differ. Equ. Anal. Comput.* 8 (2020), no. 4, 761--786, Lototsky, S. V. y Rozovsky, B. L. En: Mathematical Reviews (2021-07-19). Número de reseña: MR4174068.

León, J.A. Reseña de: weak version of path-dependent functional Itô calculus. *Ann. Probab.* 46 (2018), no. 6, 3399--3441, Leão, D.; Ohashi, A.; Simas, A. B. A. En: Mathematical Reviews (2021-12-09). Número de reseña: MR3986248.

Martha Rzedowski. Reseñas para la AMS (American Mathematical Association) (las tres últimas reseñas no han salido):

Martha Rzedowski. (3 980 939) Kim, Chan-Ho, Overconvergent quaternionic forms and anticyclotomic p -adic L -functions.

Martha Rzedowski. (4 154 956) Krumm, David and Sutherland, Nicole, Galois groups over rational function fields and explicit Hilbert irreducibility.

Martha Rzedowski. (4 117 593) Sawin, Will, Singularities and vanishing cycles in number theory over función fields.

Martha Rzedowski. (4 261 649) Blache, Régis, Hasse-Witt matrices for polynomials, and applications.

Martha Rzedowski. (4 288 640) König, Joachim, The Grunwald problem and specialization of families of regular Galois extensions.

ESTUDIANTES GRADUADOS

MAESTRÍA

1. IVÁN DE JESÚS RODRÍGUEZ DURÁN

TESIS: "Control óptimo en economía". Especialidad en Control Automático.

GRADO OBTENIDO: Maestría

DIRECTOR DE TESIS: **Dr. Jorge A. León Vázquez**

FECHA: 22/01/2021

2. JORGE ALBERTO LOZADA MURGUÍA.

TESIS: “Integración estocástica con respecto al movimiento browniano fraccionario”.
Especialidad en Control Automático
GRADO OBTENIDO: Maestría
DIRECTOR DE TESIS: **Dr. Jorge A. León Vázquez**
FECHA: 09/12/2021

3. DIEGO TRISTÁN RODRÍGUEZ.

TESIS: Sintonización de controladores lineales mediante el Regulador Cuadrático Lineal y la Optimización por Enjambre de Partículas.
GRADO OBTENIDO: Maestría
DIRECTOR DE TESIS: **Dr. Rubén Alejandro Garrido Moctezuma**, Dr. Efrén Mezura Montes.
FECHA: 17/08/2021

4. JUAN CARLOS HERNÁNDEZ BOCANEGRA

TÍTULO DE LA TESIS: “Cálculo del Campo de Géneros de una Extensión l -elemental Abelianas”
ESPECIALIDAD: Control Automático
DIRECTOR DE TESIS: **Dr. Gabriel Villa Salvador**
FECHA DE OBTENCIÓN DEL GRADO: 15 de abril de 2021.

5. BRYAN JOSUE ROJAS RICCA

TITULO DE TESES: Sintonización de observadores para sistemas no lineales con retardos en la entrada
ESPECIALIDAD: Control Automático
DIRECTOR DE TESIS: **Dra. Sabine Mondie Cusange**
FECHA DE OBTENCION DE GRADO: 18/08/2021

6. VICTOR ALEJANDRO REZA LOPEZ

TÍTULO DE LA TESIS: Observadores robustos para un proceso continuo de biorremediación de metales pesados.
ESPECIALIDAD: Control Automático
DIRECTOR DE TESIS: **Dr. Jorge A. Torres Muñoz** y Dr. Jesús Norberto Guerrero Tavares
FECHA DE OBTENCIÓN DEL GRADO: 23/08 /2021

DOCTORADO

1. CARLOS DANIEL REYES MORALES

TÍTULO DE LA TESIS: “Campo de géneros de extensiones abelianas de campos de funciones congruentes y extensiones cíclicas Kummer de grado l^n ”
ESPECIALIDAD: Control Automático
DIRECTOR DE TESIS: Dr. **Gabriel Villa Salvador**
FECHA DE OBTENCIÓN DEL GRADO: 30 de abril de 2021.

2. CARLOS MONTELONGO VÁZQUEZ

TÍTULO DE LA TESIS: “Cálculo del campo de géneros para extensiones cíclicas y abelianas de grado l^2 ”

ESPECIALIDAD: Control Automático

DIRECTOR DE TESIS: **Dr. Gabriel Villa Salvador**

FECHA DE OBTENCIÓN DEL GRADO: 2 de septiembre de 20

3. JESSICA JAZMIN MALDONADO RAMOS

TÍTULO DE LA TESIS: Desarrollo de Plataformas Experimentales de Bajo Costo Para la Enseñanza del Control Automático.

ESPECIALIDAD: Control Automático

DIRECTOR DE TESIS: **Dr. Rubén Alejandro Garrido Moctezuma** FECHA DE OBTENCIÓN DEL GRADO: 25/08/2021.

4. JOSE LUIS LUNA PINEDA

TÍTULO DE LA TESIS: Control de Servomecanismos: Un enfoque de Rechazo Activo de Perturbaciones.

ESPECIALIDAD: Control Automático

DIRECTOR DE TESIS: **Dr. Rubén Alejandro Garrido Moctezuma** FECHA DE OBTENCIÓN DEL GRADO: 03/12/2021.

5. ERICK ASIAIN DE LA LUZ

TÍTULO DE LA TESIS: Control de Sistemas Mecánicos Mediante Técnicas Adaptables y por Rechazo Activo de Perturbaciones

ESPECIALIDAD: Control Automático

DIRECTOR DE TESIS: **Dr. Rubén Alejandro Garrido Moctezuma** FECHA DE OBTENCIÓN DEL GRADO: 08/12/2021.

6. JOSE EDUARDO CHAIREZ VELOZ

TÍTULO DE LA TESIS: Análisis de Controlabilidad de redes de regulación genética biológicas complejas. La transición Epitelio-Mesénquima en el contexto de cáncer epitelial como caso de estudio.

ESPECIALIDAD: Control Automático

DIRECTOR DE TESIS: **Dr. Juan Carlos Martínez García** y Dra. María Elena Álvarez-Buylla Roces

FECHA DE OBTENCIÓN DEL GRADO: 15/07/2021

7. JORGE ORTEGA MARTINEZ

TÍTULO DE LA TESIS: Contribución al estudio del control óptimo de sistemas con retardos: teoría y aplicaciones,

ESPECIALIDAD: Control Automático

DIRECTOR DE TESIS: **Dra. Sabine Mondié Cuzange**

FECHA DE OBTENCIÓN DEL GRADO: 29/04/2021.

8. GERARDO ARNO SONK MARTINEZ
TITULO DE TESIS: Observadores adaptativos para una clase de sistemas no lineales: Aplicación al Quimiostato.
ESPECIALIDAD: Control Automático
DIRECTOR DE TESIS: **Dr. Jorge Torres Muñoz**
FECHA DE OBTENCION DE GRADO: 18/03/2021
9. LUIS ALBERTO CANTERA CANTERA
TÍTULO DE LA TESIS: Identificación de Parámetros Mediante los métodos de Mínimos Cuadrados Clásico, de Distancias Ortogonales y de Mínimos Cuadrados Totales.
ESPECIALIDAD: Control Automático
DIRECTOR DE TESIS: **Dr. Cristóbal Vargas Jarillo**
FECHA DE OBTENCIÓN DEL GRADO: 26/03/2021.
10. MARIO ANTONIO LOPEZ PACHECO

TITULO DE TESIS: Redes neuronales convolucionales para el modelado de sistemas no lineales con aplicación al monitoreo de daño estructura.
ESPECIALIDAD: Control Automático
DIRECTOR DE TESIS: **Dr. Wen Yu Liu**
FECHA DE OBTENCION DE GRADO: 27/09/2021

CURSO PROPEDEUTICO

ALGEBRA LINEAL: Dr. Fernando Castaños
ANALISIS REAL: Dr. Juan Carlos Martínez
TEORIA DEL CONTROL CLASICO: Dr. Alberto Soria L