JOSÉ GUADALUPE ROMERO VELÁZQUEZ

Director del Programa de Ingeniería en Mecatrónica y
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DOMICILIO

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CAMPOS DE INTERÉS

* Robótica
* Sistemas dinámicos
* Diseño de observadores no lineales
* Control no lineal

FORMACIÓN ACADÉMICA

* Doctor en Física, Université París XI, Francia
* Maestro en Ciencias en Robótica y Manufactura Avanzada, Instituto Politécnico Nacional, México
* Ingeniero en Comunicaciones y Electrónica, Universidad Autónoma de Zacatecas, México.

INVESTIGACIÓN ACTUAL

* Estabilización orbital de sistemas subactuados.
* Observadores adaptables de sistemas no lineales.
* Control robusto en sistemas multiagentes.

EXPERIENCIA PROFESIONAL Y ACADÉMICA

Año	Puesto
2019-Presente	Director del Programa de Ingeniería en Mecatrónica División Académica de Ingeniería. Instituto Tecnológico Autónomo de México (ITAM)
2016-2019	Profesor Investigador de Tiempo Completo Departamento Académico de Sistemas Digitales Instituto Tecnológico Autónomo de México (ITAM)
2014-2015	Research Fellow at Laboratoire d´Informatique, de Robotique et de Microélectronique, de Montpellier (LIRMM), Montepellier, France.
2013-2014	Research Fellow at Schneider Electric, Paris, France.
2009-2010	Profesor Adjunto, Universidad Politécnica de Zacatecas, Zacatecas, México.

PUBLICACIONES MÁS RELEVANTES

Co-author of 1 book and 2 chapters in books.

* R. Ortega, J. G. Romero, P. Borja and A. Donaire. PID Passivity-Based-Control of Nonlinear Systems with Applications, Wiley, 2021.
* Martínez-González, S-I. Niculescu, J. Chen, C. F. Méndez-Barrios, J. G. Romero and G. Mejía-Rodríguez. Asymptotic Analysis of Multiple Characteristics Roots for Quasi-polynomials of Retarded-Type. In: Valmorbida G., Seuret A., Boussaada I., Sipahi R. (eds). Delays and Interconnections: Methodology, Algorithms and Applications. Advances in Delays and Dynamics, Springer, Charm, pp. 131–151, 2019.
* R. Ortega, A. Donaire and J. G. Romero. Passivity Based Control of Mechanical Systems. Feedback Stabilization of Controlled Dynamic Systems, in Honor to L. Praly, Springer International Publishing, pp. 167–199, 2017.

Publication of 33 articles in scientific journals.

* J. G. Romero, I. Gandarilla, V. Santibáñez, Stabilization of a class of nonlinear underactuated mechanical systems with 2-DOF via Immersion and Invariance, European Journal of Control, 2021.
* M. R. Harandi, H. D. Taghirad, A. Molaei, J. G. Romero, Bounded inputs total energy shaping for a class of underactuated mechanical systems, International Journal of Robust and Nonlinear Control, Vol. 31(18), 2021.
* M. Korotina, J. G. Romero, S. Aranovskiy, A. Bobtsov, R. Ortega, A new on-line exponential parameters estimator whitout persistent excitation, Systems &

Control Letters, 159, 2022.

* J. G. Romero, R. Ortega, A. Bobtsov, Parameter estimation and adaptive control of Euler-Lagrange systems using the power balance equation parameterization, International Journal of Control, 2021.
* I. Gandarilla, V. Santibáñez, J. Sandoval, J. G. Romero, PID passivity-based control laws for joint position regulation of a self-balancing robot, Control Engineering Practice 116, 104927, 2021.
* J. G. Romero, J. A. Moreno, A. M Aguilar, An adaptive speed observer for a class of nonlinear mechanical systems: Theory and experiments, Automatica 130, 109710, 2021.
* M. R. J. Harandi, S. A. Khalilpour, H. D. Taghirad, J. G. Romero, Adaptive control of parallel robots with uncertain kinematics and dynamics, Mechanical Systems and Signal Processing 157, 107693, 2021.
* R. Ortega, V. Gromov, E. Nuño, A. Pyrkin, J. G. Romero Parameter estimation of nonlinearly parameterized regressions without overparameterization: Application to adaptive control, Automatica 127, 109544, 2021.
* R. Ortega, B. Yi and J. G. Romero. Robustification of Nonlinear Control Systems vis-á-vis Actuator Dynamics: An Immersion and Invariance Approach. Systems & Control Letters, 2020.
* R. Ortega, V. Gromov, E. Nuño, A. Pyrkin and J. G. Romero. Parameter estimation of nonlinearly parameterized regressions without overparameterization nor persistent excitation: Application to system identification and adaptive control, Automatica, 2020.
* A. Donaire, J. G. Romero and R. Ortega. Correction to the Paper "A Robust IDA-PBC Approach for Handling Uncertainties in Underactuated Mechanical Systems". IEEE Transaction on Automatic Control, Vol. 65(7), 2020.
* M. A. Arteaga-Peréz, J. Pliego-Jiménez and J. G. Romero. Experimental Results on the Robust and Adaptive Control of Robot Manipulators Without Velocity Measurements. IEEE Transactions on Control Systems Technology, Vol. 28(6), 2020.
* R. Ortega, B. Yi, J. G. Romero and A. Astolfi. Orbital stabilization systems via the immersion and invariance technique. International Journal of Robust and Nonlinear Control, Vol. 30(5), 2020.
* M. A. Artega–Pérez, A. Ortiz-Espinoza, J. G. Romero and G. Espinosa-Pérez. On the adaptive control of robot manipulators with velocity observers. International Journal of Robust and Nonlinear Control, Vol. 30(11), 2020.
* J. G. Romero and H. Rodríguez-Cortés. Asymptotic stability for a transformed nonlinear UAV model with a suspended load via energy shaping. European Journal of Control, Vol. 52(3), 2020.
* S. Aranovskiy, R. Ortega, J. G. Romero and D. Sokolov. A globally exponentially stable speed orbserver for a class of mechanical systems: Simulation comparison with high-gain and sliding mode designs. International Journal of Control, Vol. 92(7), 2019.
* J. G. Romero, A. Donaire, R. Ortega and P. Borja. Global stabilisation of underactuated mechanical systems via PID passivity-based control. Automatica, Vol. 96, 2018.
* H. M. Becerra, J. A. Colunga-Ramírez and J. Guadalupe Romero. Robust trajectory tracking controllers for pose-regulation of wheeled mobile robots. A Journal of Intelligent and Robotic Systems, Vol. 15(1), 2018.

* A. Donaire, J. G. Romero and T. Pérez. Trajectory tracking passivity-based control for marine vehicles subject to disturbances, Journal of the Franklin Institute, Vol.354(5), 2017.
* A. Donaire, J. G. Romero, R. Ortega and B. Siciliano, Robust IDA-PBC for underactuated mechanical systems subject to matched disturbances. International Journal of Robust and Nonlinear Control, Vol. 27(6), 2017.
* A. Donaire, R. Ortega and J. Guadalupe Romero. Simultaneous interconnection and damping assignment passivity–based control of mechanical systems using generalized forces. Systems & Control Letters, 2016.
* J. G. Romero, R. Ortega and A. Donaire. Energy shaping of mechanical systems via PID control and extension to constant speed tracking. IEEE Transactions on Automatic Control, Vol. 61(4), 2016.
* A. Donaire, R. Mehra, R. Ortega, S. Satpute, J. G. Romero, F. Kazi and N. M. Singh. Shaping the energy of mechanical systems without solving partial differential equations. IEEE Transactions on Automatic Control, Vol. 61(4), 2016.
* J. G. Romero, R. Ortega, Z. Han, T. Devos and F. Malrait. An adaptive flux observer for the permanent magnet synchronous motor. International Journal of Adaptive Control and Signal Processing, Vol 30(3), 2016.
* J. G. Romero and R. Ortega. Two globally convergent adaptive speed observers for mechanical systems. Automatica, Vol 60, pp. 7–11, 2015.
* J. G. Romero, R. Ortega and I. Sarras. A globally exponentially stable tracking controller for mechanical systems using position feedback. IEEE Transactions on Automatic Control, Vol. 60(3), 2015.
* D. Navarro-Alarcón, Y. Liu, J. G. Romero and P. Li. Energy shaping methods for asymptotic force regulation of compliant mechanical systems. IEEE Transactions on Control Systems Technology, Vol. 22(6), 2014.
* D. Navarro-Alarcón, Y. Liu, J. G. Romero and P. Li. On the visual deformation of compliant objects: Uncalibrated control methods and experiments. International Journal of Robotics Research, Vol. 33(11), 2014.
* D. Navarro-Alarcón, Y. Liu, J. G. Romero and P. Li. Model-free visually servoed deformation control of elastic objects by robot manipulators. IEEE Transaction on Robotic, Vol. 29(6), 2013.
* J. G. Romero, A. Donaire and R. Ortega. Robust energy shaping control of mechanical systems. Systems & Control Letters, Vol. 62, pp. 770–780, 2013.
* R. Ortega and J. G. Romero. Robust integral control of port–Hamiltonian systems: The case of non–passive outputs with unmatched disturbances. Systems & Control Letters, Vol. 61, 2012.
* J. L. Ortiz Simon, A. Minor-Martínez, D. Lorias-Espinoza and J. G. Romero. Mechatronic assistant system for dental drill handling. The international journal of Medical robotics computer assisted surgery, Vol. 7, Issue 1, 2011.
* M. A. Ebrahim, A. E.L-Metwally, F. M. Bendary, W. M. Mansour, H. S. Ramadan, R. Ortega and J. G. Romero. Optimization of Proportional–Integral–Differential controller for wind power plant using swarm optimization technique. International Journal of Emerging Technologies in Sciences and Engineering, Vol. 2 (2), 2010.