

DR. MAHMUT REYHANOGLU
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Education

The University of Michigan **Ann Arbor, MI**
Ph.D. in Aerospace Engineering, August 1992.

Dissertation: Control and Stabilization of Nonholonomic Dynamic Systems

The University of Michigan **Ann Arbor, MI**
M.S. in Electrical Engineering: Systems, December 1991.

The Ohio State University **Columbus, OH**
M.S. in Aeronautical and Astronautical Engineering, December 1987.

Thesis: Model Truncation Effects in Variable Structure Control System Maneuvering of Flexible Spacecraft

Istanbul Technical University **Istanbul, Turkey**
M.S. in Mechanical Engineering, July 1984.

Thesis: Dynamic Characteristics of Hydrostatic Driving Systems

Istanbul Technical University **Istanbul, Turkey**
B.S. in Aeronautical Engineering, July 1982.

Senior Thesis: Dynamic Characteristics of Unsteady Boundary Layer Flows

Employment

- 2021-pres Professor & Director of Robotics Engineering, Columbus State University
Columbus, GA
- 2017-2021 Distinguished Professor & Chair of Engineering, UNCA, Asheville, NC;
Adj. Teaching Professor of Mechanical & Aerospace Engineering, North
Carolina State University (NCSU), Raleigh, NC
- 2014-2017 Professor and Associate Department Chair, ERAU, Daytona Beach, FL
- 2013-2014 Visiting Professor, Aerospace Engineering Division, School of Mechanical
and Aerospace Engineering, Nanyang Technological University (NTU),
Singapore
- 2011-2013 Professor, Graduate Program and Associate Department Chair, ERAU,
Daytona Beach, FL
- 2007-2011 Professor, Associate Department Chair, and Program Coordinator of B.S.
in Engineering Physics (BSEP) & B.S. in Space Physics (BSSP) programs,
ERAU, Daytona Beach, FL
- 2005-2007 Professor, Associate Department Chair & Program Chair of BSEP, ERAU,
Daytona Beach, FL
- 2000-2005 Associate Professor & Program Chair of BSEP, ERAU, Daytona Beach, FL
- 1998-2000 Assistant Professor of Engineering Physics, ERAU, Daytona Beach, FL
- 1997-1998 Instructor, Automation Robotics Technology, TSTC, Sweetwater, TX
- 1996-1997 Visiting Assistant Professor, Mechanical Eng., Ohio University, Athens, OH
- 1995-1996 Research Fellow, Applied Mathematics, University of Twente, Netherlands
- 1992-1995 Assistant Professor, Mechanical Engineering, King Fahd University, KSA

Honors & Awards

- Distinguished Scholarship & Creative Achievement Award (UNCA, 2020)
- First Runner-Up, ERAU Researcher of the Year (2012, 2013).
- Finalist, ERAU Researcher of the Year (2004, 2005, 2006).
- Rackham Block Grant Fellowship (1990-1992).
- National Merit Scholarship from Turkish Government (1985-1990).

Societies & Activities

- Senior Member of IEEE (Institute of Electrical & Electronics Engineers).
- Senior Member of AIAA (American Institute of Aeronautics & Astronautics).
- Associate Editor, Electronics – Systems & Control Engineering (2020-present)
- Associate Editor, International Journal of Aerospace Engineering (2010-present).
- Associate Editor, IEEE Transactions on Automatic Control (2001-2007).
- Associate Editor, IEEE Control Systems Society Conference Editorial Board (1997-2001).
- Member, AIAA Guidance, Navigation & Control Technical Committee (1999-2002).
- International Program Committee Member for IEEE and IFAC Conferences.
- Technical reviewer for IEEE, IFAC, and SIAM Journals, Systems & Control Letters, and IEEE sponsored conferences.

Service and Administrative Activities at ERAU

- Served as Associate Department Chair.
- Served as Acting Department Chair.
- Served as EP (Engineering Physics) and SP (Space Physics) Program Chair.
- Served as EP Graduate Program Chair.
- Served as PS (Physical Sciences) Faculty Development Committee Member.
- Served as PS Faculty Search Committee Chair.
- Served as PS Promotion and Tenure Committee Chair.
- Served as COAS (College of Arts and Sciences) Assessment Committee Member.
- Served as COAS Admission / Recruitment Committee Member.
- Served as COAS Promotion and Tenure Committee Member.
- Served as Vice Speaker of ERAU Faculty Senate.
- Served as Faculty Senate Research Committee Member.
- Served as Faculty Advisor for Sigma Pi Sigma National Physics Honor Society.
- Developed the PhDEP program at ERAU.
- Designed and implemented the SACS (Southern Association of Colleges and Schools) Assessment Plans for the BSEP, BSSP, MSEP, and PhDEP programs.
- Developed the ABET Self-Study Reports and coordinated the highly successful ABET accreditation visits for the BSEP program in 2001 and 2007.
- Advised undergraduate & graduate students, and McNair Scholars.
- Advised Capstone Senior Design and Microgravity Student Projects.

Research Interests

Unmanned Aerial Vehicles, Aerial Robots, Autonomous Systems, Mechatronics, Thermoacoustics, Nonlinear Systems, Dynamics and Control of Space Multibody Systems, Space Robotics, Mechanical and Aerospace Systems, Geometric Control Theory, Astrodynamics.

Graduate Students/Interns Supervised/Supervising

- **Aaron Steinbusch** (December 2018)
Graduate Report Title: Dynamic Filter-Based Control of UAV Systems
- **Jari Jacobus van Steen** (December 2018)
Graduate Report Title: Global Tracking of a Knife Edge in 3D
- **Peter Lambert** (May 2018)
Graduate Report Title: Observer-based Sliding Mode Control of a Six DOF Quadcopter
- **Derek Hoffman** (March 2018)
Dissertation Title: Nonlinear Control of Underactuated and Constrained Systems
- **Muhammad Rehan** (April 2018)
Dissertation Title: Global Formulation and Control of a Class of Nonholonomic Systems
- **Michael Campobasso** (May 2017)
Thesis Title: Leader-Follower Trajectory Generation and Tracking for Quadrotor Swarms
- **Mikael Molina Sandoval** (May 2016)
Thesis Title: Nonlinear Control of a Thermoacoustic System with Multiple Heat Sources and Actuators
- **Remon Damen** (December 2015)
Graduate Report Title: Nonlinear Control of a Hover System
- **Jop de Wit** (May 2014)
Graduate Report Title: Modeling and Control of a Two-Link Flexible Robot Manipulator
- **Jaime Rubio** (July 2013)
Dissertation Title: Dynamics and Control of Higher-Order Nonholonomic Systems
- **Juan Alvarado** (March 2012)
Thesis Title: Space Vehicle Debris Hazard Airspace Stratification
- **Takahiro Kuhara** (December 2011)
Thesis Title: Dynamics and Control of an Asteroid Orbiting Satellite
- **Jaime Rubio** (May 2011)
Thesis Title: Nonlinear Control of Underactuated Space Systems
- **Chau T. Ton** (June 2009)
Thesis Title: Magnetic Stabilization of Nadir-Pointing Small Satellites
- **Pavan Donepudi** (May 2007)
Thesis Title: Control System Design and Simulation of Spacecraft Formations via Virtual Structure Approach
- **Jasper van de Loo** (May 2006)
Thesis Title: Control of a Nonholonomic Control Moment Gyroscope
- **Philip Savella** (August 2005)
Thesis Title: Maneuvering Control of a Spacecraft with Propellant Sloshing

- **Daniel Dyer** (June 2005)
Thesis Title: Control System Design and Simulation of Spacecraft Formations
- **Jeremy Eckhart** (May 2005)
Thesis Title: Modeling and Slew-Maneuver Control of a Flexible Spacecraft
- **Theo Geluk** (May 2004)
Thesis Title: Control of First-Order Nonholonomic Systems
- **Ard Bommer** (May 2004)
Thesis Title: Control of Underactuated Mechanical Systems
- **Emad I. Al-Regib** (May 1994)
Thesis Title: Nonholonomic Motion Planning for Wheeled Mobile Systems Using Geometric Phases

Research Grant Activities

- Consultant, NASA SBIR Phase I, “Multi-Lift-Temperature Stirling Cryocooler and Controller for CubeSat Platform,” \$150,000, 2022-2023.
- Consultant, NASA SBIR Phase I, “Dynamic Controller for Modular Double-Acting Free-Piston Stirling Machines,” \$125,000, 2020-2021.
- NAVAIR Contract, “Universal Fuel System Pressure Test Set,” \$12,000, 2020-2021.
- Cisco Systems Contract, “Autonomous Mobile Robot,” \$10,000, 2018-2019.
- NAVAIR Contract, “Semi-Automatic ECASS Carrier,” \$7,000, 2017-2018.
- NC Community Foundation/Duke Energy Grant, “Growing UNC Asheville’s Engineering & Mechatronics Program,” \$400,000, 2017-2018.
- Co-PI, DSO National Laboratories of Singapore, “Automatic Landing System for UAVs,” \$150,000, 2013-2014.
- PI, FAA-CST Contract, “Space Vehicle Debris Hazard Airspace Stratification Feasibility Study,” \$103,327, 2011-2012.
- PI, FAA-CST Contract, “Spacecraft and Propulsion Technician Training and Certification,” \$50,000, 2011-2012.
- PI, NASA FSGC Research Grant, “Development of Novel Attitude Control Algorithms for Small Satellites Using only Magnetic Actuation,” \$30,000, 2008-2009.
- PI, NASA FSGC Research Grant, “Dynamics and Control of Underactuated Spacecraft Systems,” \$25,000, 2003-2004.
- PI, Daytona Beach Research Grants, “Dynamics and Control of Underactuated Mechanical Systems,” ~\$100,000, 1999-2002.
- ERAU Equipment Grants, ~\$90,000, 1998-2000. Purchased a 4-DOF Control Moment Gyroscope, a 3-DOF Hovercraft, a Two-Link Flexible Robot Arm, an Air bearing system, and a Compressor for the Spacecraft Engineering Research Lab.
- Participated in research projects supported by the Dutch Institute of Systems and Control, Modeling and Control of Open Physical Systems, University of Twente, Enschede, Netherlands, 1995-1996.
- Participated in research projects supported by the NSF under Grants MSM-8722266 and MSS-9114630, and by the NASA Grant under NAG-1-1419, University of Michigan, 1989-1992.

Peer-Reviewed Publications (~7,500 citations-- Google Scholar)

Journal and Proceedings Papers

- 2011-2022** [1] **M. Reyhanoglu**, M. Rehan, and M. Jafari, "Simple Learning-Based Robust Control of a 2-DOF Helicopter System," *Electronics*, 2022, 11, 2075.
- [2] M. Navabi, N. S. Hashkavaei, and **M. Reyhanoglu**, "Satellite Attitude Control Using Optimal Adaptive and Fuzzy Controllers," Submitted to *Acta Astronautica*, 2022.
- [3] M. Navabi, A. Davoodi, and **M. Reyhanoglu**, "Hybrid Approach for Studying Fuel Sloshing Behavior in a Controlled Spacecraft," Submitted to *Journal of Vibration and Control*, 2022.
- [4] M. Navabi, A. Davoodi, and **M. Reyhanoglu**, "Satellite Attitude Control via Optimal Adaptive and Fuzzy Controllers," Submitted to *Acta Astronautica*, 2021.
- [5] M. Navabi, A. Davoodi, and **M. Reyhanoglu**, "Optimum Fuzzy Sliding Mode Control of Fuel Sloshing in a Spacecraft Using PSO Algorithm," *Acta Astronautica*, Vol. 167, 2020, pp. 331-342.
- [6] M. Mehndiratta, E. Kayacan, **M. Reyhanoglu**, and E. Kayacan, "Robust Tracking Control of Aerial Robots via a Simple Learning Strategy-based Feedback Linearization," *IEEE Access*, Vol. 8, Issue 1, 2020, pp. 1653-1669.
- [7] J. R. Hervas, A. Gupta, Y.-W. Ong, and **M. Reyhanoglu**, "Pay-per-flight Dynamic Pricing of UAV Operations," *Proc. Int. Conf. Artificial Intelligence and Data Analytics for Air Transportation*, 2020, DOI: 10.1109/AIDA-AT48540.2020.9049171, pp. 1-7.
- [8] A. K. Jayaprakash, K. Kidambi, W. MacKunis, S. V. Drakunov, and **M. Reyhanoglu**, "Finite-time State Estimation for an Inverted Pendulum under Input-multiplicative Uncertainty," *Robotics* 2020, 9, 87, DOI: 10.3390/robotics9040087.
- [9] M. O. Kinaci, I. Bayezit, and **M. Reyhanoglu**, "A Practical Feedforward Speed Control for Autonomous Underwater Vehicles," *Ocean Engineering*, Vol. 218, 2020, Article 108214.
- [10] M. Navabi, A. Davoodi, and **M. Reyhanoglu**, "Modeling and Control of a Nonlinear Coupled Spacecraft-Fuel System," *Acta Astronautica*, Vol. 162, 2019, pp. 436-446.
- [11] A. Steinbusch and **M. Reyhanoglu**, "Robust Nonlinear Output Feedback Control of a 6-DOF Quadrotor UAV," *Proc. Asian Control Conference*, 2019, 1655-1660.
- [12] A. Steinbusch and **M. Reyhanoglu**, "Robust Nonlinear Tracking Control of a 2-DOF Helicopter System," *Proc. Asian Control Conference*, 2019, pp. 1649-1654.

- [13] J. van Steen and **M. Reyhanoglu**, “Trajectory Tracking Control of a Rolling Disk on a Smooth Manifold,” *Proc. Asian Control Conference*, 2019, pp. 43-48.
- [14] M. Rehan and **M. Reyhanoglu**, and J. van Steen, “Trajectory Tracking of a Knife-Edge on a Flat Surface,” *Proc. European Control Conference*, 2019, pp. 1648-1652.
- [15] M. Rehan and **M. Reyhanoglu**, “Global Formulation and Motion Planning for a Sphere Rolling on a Smooth Surface,” *International Journal of Control, Automation and Systems*, Vol. 16, No. 6, 2018, pp. 2709-2717.
- [16] M. Rehan and **M. Reyhanoglu**, “Control of Rolling Disk Motion on an Arbitrary Smooth Surface,” *IEEE Control Systems Letters*, Vol. 2, No. 3, 2018, pp. 357-362.
- [17] D. Hoffman, M. Rehan, W. MacKunis, and **M. Reyhanoglu**, “Quaternion-based Robust Trajectory Tracking Control of a Quadrotor Hover System,” *International Journal of Control, Automation and Systems*, Vol. 16, No. 6, 2018, pp. 2575-2584.
- [18] D. Hoffman and **M. Reyhanoglu**, “Differential Geometric Approach to Robust Control of an Oscillatory Base Robot Manipulator,” *Proc. IEEE Industrial Electronics Society*, 2018, pp. 2262-2267.
- [19] M. Rehan and **M. Reyhanoglu**, “Motion Planning for a Knife-Edge Moving on the Surface of a Torus,” *Proc. IEEE Industrial Electronics Society*, 2018, pp. 2354-2359.
- [20] N. Ramos-Pedroza, K. Kidambi, W. MacKunis, and **M. Reyhanoglu**, “A Nonlinear Output Feedback Regulation Method for Limit Cycle Oscillation Suppression Using a Sliding Mode Observer,” *Proc. IEEE Conf. Decision and Control*, 2018, pp. 5646-5651.
- [21] P. Lambert and **M. Reyhanoglu**, “Observer-Based Sliding Mode Control of a 6-DOF Quadrotor UAV,” *Proc. IEEE Industrial Electronics Society*, 2018, pp. 2379-2384.
- [22] P. Lambert and **M. Reyhanoglu**, “Observer-Based Sliding Mode Control of a 2-DOF Helicopter System,” *Proc. IEEE Industrial Electronics Society*, 2018, pp. 2596-2600.
- [23] E. Kayacan, M. A. Khanesar, J. R. Hervas, and **M. Reyhanoglu**, “Learning Control of Unmanned Aerial Vehicles Using Fuzzy Neural Networks,” *International Journal of Aerospace Engineering*, Vol. 2017, Article ID 5402809, 12 pages, DOI: 10.1155/2017/5402809.
- [24] N. Harris McClamroch, **M. Reyhanoglu**, and M. Rehan, “Knife-Edge Motion on a Surface as a Nonholonomic Control Problem,” *IEEE Control Systems Letters*, Vol. 1, No.1, 2017, pp. 26-31.
- [25] N. Ramos-Pedroza, W. MacKunis, and **M. Reyhanoglu**, “Synthetic Jet Actuator-based Aircraft Tracking Using a Continuous Robust Nonlinear Control Strategy,”

International Journal of Aerospace Engineering, Vol. 2017, Article ID 4934281, 13 pages, DOI: 10.1155/2017/4934281.

[26] S. Stebler, M. Campobasso, K. Kidambi, W. MacKunis, and **M. Reyhanoglu**, “Dynamic Neural Network-Based Sliding Mode Estimation of Quadrotor Systems,” *Proc. American Control Conf.*, 2017, DOI: 10.23919/ACC.2017.7963344, pp. 2600-2605,

[27] D. Hoffman, M. Rehan, W. MacKunis, and **M. Reyhanoglu**, “Robust Quaternion-based Nonlinear Output Feedback Tracking Control of a Quadrotor Hover System,” *Proc. IEEE Conf. Decision and Control*, 2017, DOI: 10.1109/CDC.2017.8264379, pp. 4872-4877.

[28] S. Stabler, W. MacKunis, N. Ramos-Pedroza, and **M. Reyhanoglu**, “A Dynamic Neural Network-based Sliding Mode Observer Method for a Class of Uncertain Dynamic Systems,” *Proc. IEEE Conf. Control Tech. App.*, 2017, DOI: 10.1109/CCTA.2017.8062431, pp. 1-6.

[29] **M. Reyhanoglu** and D. Hoffman, “Finite-Time Control of a Compliant Base Robot Manipulator,” *Proc. Asian Control Conf.*, 2017, DOI: 10.1109/ASCC.2017.8287365, pp. 1335-1340.

[30] D. Hoffman and **M. Reyhanoglu**, “Geometric Tracking Control of a Three-Dimensional Revolute Joint Robot,” *Proc. Asian Control Conf.*, 2017, DOI: 10.1109/ASCC.2017.8287245, pp. 641-646.

[31] M. Rehan, **M. Reyhanoglu**, and N. Harris McClamroch, “Motion Planning for a Knife-Edge on the Surface of a Hyperboloid,” *Proc. Asian Control Conf.*, 2017, DOI: 10.1109/ASCC.2017.8287363, pp. 1326-1330.

[32] J. R. Hervas, **M. Reyhanoglu**, H. Tang, and E. Kayacan, “Nonlinear Control of Fixed-Wing UAVs in Presence of Stochastic Winds,” *Communications in Nonlinear Science and Numerical Simulation*, Vol. 33, 2016, pp. 57-69.

[33] J. R. Hervas and **M. Reyhanoglu**, “Nonlinear Control of a Robot Manipulator with a Nonholonomic Jerk Constraint,” *Asian Journal of Control*, Vol. 18, No. 5, 2016, pp. 1-8.

[34] W. MacKunis, **M. Reyhanoglu**, K. Kidambi, and J. R. Hervas, “Robust and Adaptive Nonlinear Control of Thermoacoustic Oscillations in Rijke-Type Systems,” *Proc. IEEE Int. Conf. Adv. Intelligent Mechatronics*, 2016, DOI: 10.1109/AIM.2016.7576873, pp. 840-845.

[35] **M. Reyhanoglu** and D. Hoffman, “Modeling and Control of a Flexible-Structure-Mounted Robot Manipulator,” *Proc. IEEE Int. Con. Adv. Intelligent Mechatronics*, 2016, DOI: 10.1109/AIM.2016.7576892, pp. 953-957.

- [36] R. Damen, **M. Reyhanoglu**, W. MacKunis, and J. R. Hervas, "Passivity-Based Quaternion Feedback Control of a Hover System," *Proc. Int. Conf. Control, Automation and Systems*, 2016, DOI: 10.1109/ICCAS.2016.7832321, pp. 201-206.
- [37] W. MacKunis, **M. Reyhanoglu**, K. Kidambi, and J. R. Hervas, "Nonlinear Control of Thermoacoustic Oscillations in Rijke-Type Systems," *Proc. Int. Conf. Control, Automation and Systems*, 2016, DOI: 10.1109/ICCAS.2016.7832470, pp. 1221-1226.
- [38] **M. Reyhanoglu**, D. Hoffman, and J. de Wit, "Nonlinear Modeling and Control of a Two-Link Hybrid Manipulator," *Proc. Inter. Conf. Control, Automation, Robotics and Vision*, 2016, DOI: 10.1109/ICARCV.2016.7838809, pp. 1-5.
- [39] **M. Reyhanoglu**, R. Damen, and W. MacKunis, "Observer-Based Sliding Mode Control of a 3-DOF Hover System," *Proc. Inter. Conf. Control, Automation, Robotics and Vision*, 2016, pp. 1-6, DOI: 10.1109/ICARCV.2016.7838643.
- [40] S. Stebler, W. MacKunis, and **M. Reyhanoglu**, "Nonlinear Output Feedback Tracking Control of a Quadrotor UAV in the Presence of Uncertainty," *Proc. Inter. Conf. Control, Automation, Robotics and Vision*, 2016, DOI: 10.1109/ICARCV.2016.7838569, pp. 1-6.
- [41] N. Ramos-Pedroza, K. Kidambi, W. MacKunis, and **M. Reyhanoglu**, "Nonlinear Tracking Control and Structural Vibration Suppression for Aircraft Using Synthetic Jet Actuators," *Proc. Int. Conf. Control, Automation, Robotics and Vision*, 2016, DOI: 10.1109/ICARCV.2016.7838797, pp. 1-6.
- [42] J. R. Hervas, D. Zhao, and **M. Reyhanoglu**, "Nonlinear Feedback Control of Self-Sustained Thermoacoustic Oscillations," *Aerospace Science and Technology*, Vol. 41, 2015, pp. 209-215.
- [43] M. A. Khanesar, E. Kayacan, **M. Reyhanoglu**, and O. Kaynak, "Feedback Error Learning Control of Magnetic Satellites using Type-2 Fuzzy Neural Networks with Elliptic Membership Functions," *IEEE Transactions on Cybernetics*, Vol. 45, No. 4, 2015, pp. 858-868.
- [44] J. R. Hervas and **M. Reyhanoglu**, "Controllability and Stabilizability of a Class of Systems with Higher-Order Nonholonomic Constraints," *IFAC Journal Automatica*, Vol. 54, 2015, pp. 229-234.
- [45] J. R. Hervas, **M. Reyhanoglu**, and W. MacKunis, "Observer-based Sliding Mode Control of Rijke-type Combustion Instability," *Journal of Low Frequency Noise and Active Vibration Control*, Vol. 34, No. 2, 2015, pp. 201-218.
- [46] N. Ramos-Pedroza, W. MacKunis, and **M. Reyhanoglu**, "A Sliding Mode LCO Regulation Strategy for Dual-Parallel Underactuated UAV Systems Using Synthetic Jet Actuators," *International Journal of Aerospace Engineering*, Vol. 2015, Article ID 795348, 7 pages, DOI:10.1155/2015/795348.

- [47] N. Ramos-Pedroza, W. MacKunis, and **M. Reyhanoglu**, “Sliding Mode Control-Based Limit Cycle Oscillation Suppression for UAVs Using Synthetic Jet Actuators,” *Proc. Int. Workshop on Recent Advances in Sliding Modes*, 2015, pp. 1-5, DOI: 10.1109/RASM.2015.7154584.
- [48] J. R. Hervas, **M. Reyhanoglu**, and W. MacKunis, “Sliding Mode Control of Rijke-Type Thermoacoustic Systems,” *Proc. Int. Workshop on Recent Advances in Sliding Modes*, 2015, pp. 1-6, DOI: 10.1109/RASM.2015.7154639.
- [49] J. R. Hervas and **M. Reyhanoglu**, “Thrust-Vector Control in 3D Maneuvering of a Spacecraft with Fuel Slosh Dynamics,” *Acta Astronautica*, Vol. 98, 2014, pp. 120-127.
- [50] D. Zhao and **M. Reyhanoglu**, “Feedback Control of Transient Growth in a Non-normal Thermoacoustic System,” *Journal of Sound and Vibration*, Vol. 333, No. 16, 2014, pp. 3639-3656.
- [51] J. R. Hervas, D. Zhao, and **M. Reyhanoglu**, “Linear-Quadratic-Gaussian Control of Rijke-Type Combustion Instability,” *Mathematics in Engineering, Science and Aerospace*, Vol. 5, No. 4, 2014, pp. 1-12.
- [52] J. R. Hervas, D. Zhao, and **M. Reyhanoglu**, “Nonlinear Feedback Control of Thermoacoustic Oscillations in a Rijke Tube,” *Proc. IEEE Int. Symp. Industrial Electronics*, 2014, pp. 173-177, DOI: 10.1109/ISIE.2014.6864606.
- [53] J. R. Hervas, **M. Reyhanoglu**, and H. Tang, “Automatic Landing Control of Unmanned Aerial Vehicles on Moving Platforms,” *Proc. IEEE Int. Symp. Industrial Electronics*, 2014, pp. 69-74, DOI: 10.1109/ISIE.2014.6864588.
- [54] J. R. Hervas and **M. Reyhanoglu**, “Observer-Based Nonlinear Control of Space Vehicles with Multi-Mass Fuel Slosh Dynamics,” *Proc. IEEE Int. Symp. Industrial Electronics*, 2014, pp. 178-182, DOI: 10.1109/ISIE.2014.6864607.
- [55] D. Zhao and **M. Reyhanoglu**, “Feedback Control of Transient Growth of Thermoacoustic Oscillations,” *Proc. 20th AIAA/CEAS Aeroacoustics Conference, AIAA Aviation and Aeronautics Forum and Exposition 2014*, AIAA-2014-3183.
- [56] J. R. Hervas, E. Kayacan, **M. Reyhanoglu**, and H. Tang, “Sliding Mode Control of Fixed-Wing UAVs in the Presence of Stochastic Wind,” *Proc. Int. Conf. Control, Automation, Robotics and Vision*, 2014, pp. 986-991, DOI: 10.1109/ICARCV.2014.7064440.
- [57] J. R. Hervas, D. Zhao, and **M. Reyhanoglu**, “Observer-Based Control of Rijke-type Combustion Instability,” *AIP Proceedings*, Vol. 1637, 2014, pp. 899-906.
- [58] J. R. Hervas, **M. Reyhanoglu**, and H. Tang, “Nonlinear Automatic Landing Control of Unmanned Aerial Vehicles on Moving Platforms via a 3D Laser Radar,” *AIP Proceedings*, Vol. 1637, 2014, pp. 907-917.

- [59] **M. Reyhanoglu** and J. R. Hervas, "Robotically Controlled Sloshing Suppression in Point-to-Point Liquid Container Transfer," *Journal of Vibration and Control*, Vol. 19, No. 14, 2013, pp. 2137-2144.
- [60] **M. Reyhanoglu** and J. Alvarado, "Estimation of Debris Dispersion due to a Space Vehicle Breakup during Reentry," *Acta Astronautica*, Vol. 86, 2013, pp. 211-218.
- [61] **M. Reyhanoglu** and J. R. Hervas, "Nonlinear Modeling and Control of Slosh in Liquid Container Transfer via a PPR Robot," *Communications in Nonlinear Science and Numerical Simulation*, Vol. 18, 2013, pp. 1481-1490.
- [62] J. R. Hervas and **M. Reyhanoglu**, "Controllability and Stabilizability of Higher-Order Nonholonomic Systems," *Proc. Asian Control Conf.*, 2013, pp. 1-5.
- [63] **M. Reyhanoglu**, J. Alvarado, and A. Carmi, "Estimation of Debris Hazard Areas due to a Space Vehicle Breakup at High Altitudes," *Proc. Asian Control Conf.*, 2013, pp. 1-6.
- [64] W. MacKunis, S. Subramanian, S. Mehta, C. Ton, J.W. Curtis, and **M. Reyhanoglu**, "Robust Nonlinear Aircraft Tracking Control Using Synthetic Jet Actuators," *Proc. IEEE Conf. Decision and Control*, 2013, pp. 220-225.
- [65] J. R. Hervas and **M. Reyhanoglu**, "On the Nonlinear Modeling of Systems with Higher-Order Nonholonomic Constraints," *Proc. Int. Conf. Control, Automation and Systems*, 2013, pp. 1009-1013.
- [66] J. R. Hervas and **M. Reyhanoglu**, "Nonlinear Control of a Third Order Nonholonomic System," *Proc. Int. Conf. Control, Automation and Systems*, 2013, pp. 17-22.
- [67] J. R. Hervas and **M. Reyhanoglu**, "Observer-Based Nonlinear Control of Slosh in Liquid Container Transfer via a PPR Robot," *Proc. Int. Conf. Control, Automation and Systems*, 2013, pp. 777-782.
- [68] J. R. Hervas and **M. Reyhanoglu**, "Thrust-Vector Control of a Three-Axis Stabilized Spacecraft with Fuel Slosh Dynamics," *Proc. Int. Conf. Control, Automation and Systems*, 2013, pp. 761-766.
- [69] **M. Reyhanoglu** and J. R. Hervas, "Nonlinear Dynamics and Control of Space Vehicles with Multiple Fuel Slosh Modes," *IFAC Journal Control Engineering Practice*, Vol. 20, 2012, pp. 912-918.
- [70] J. R. Hervas and **M. Reyhanoglu**, "Thrust Vector Control of an Upper-Stage Rocket with Multiple Fuel Slosh Modes," *Mathematical Problems in Engineering*, Vol. 2012, Article ID 848741, 18 pages, 2012.
- [71] W. MacKunis, **M. Reyhanoglu**, and S. Drakunov, "Robust and Adaptive Maximum Power Point Tracking for Standalone Photovoltaic Systems Using a Sliding

Mode Control Approach,” *Proc. IEEE Conf. Industrial Electronics and Applications*, 2012, pp. 1156-1160.

[72] **M. Reyhanoglu** and J. R. Hervas, “Point-to-Point Liquid Container Transfer via a PPR Robot with Sloshing Suppression,” *Proc. American Control Conf.*, 2012, pp. 5490-5494.

[73] J. R. Hervas, **M. Reyhanoglu**, and S. Drakunov, “Three-Axis Magnetic Attitude Control Algorithms for Small Satellites in the Presence of Noise,” *Proc. Int. Conf. Control, Automation and Systems*, 2012, pp. 1342-1347.

[74] J. R. Hervas and **M. Reyhanoglu**, “Control of a Spacecraft with Time-Varying Propellant Slosh Parameters,” *Proc. Int. Conf. Control, Automation and Systems*, 2012, pp. 1621-1626.

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Courses Taught/Teaching

Introduction to Robotics	Engineering Research Projects
Robotics and Autonomous Systems	Intro to Space Systems Design
Mechatronics Systems Modeling	Space Systems Design I
Senior Design in Mechatronics I	Space Systems Design II
Senior Design in Mechatronics II	Special Topics in Engineering Physics
Unmanned Aerial Vehicles	Technical Physics I
Aerospace Control Theory	Technical Physics II
Aircraft Electrical & Electronics Circuits	Kinematics and Dynamics*
Electrical Engineering	Advanced Dynamics*
Flight Performance	Advanced Numerical Analysis*
Space Mechanics	Nonlinear Vibrations*
Airplane Stability & Control	Optimal Dynamical Systems*
Spacecraft Attitude Dynamics	Nonlinear Control Theory & Applications*
Control Systems Analysis & Design	Analytical Techniques in Engineering Physics*
Flight Dynamics & Control	Numerical Methods for Engineers & Scientists*
Spacecraft Control	Airplane Dynamic Stability*
Space Systems Engineering	Advanced Spacecraft Dynamics & Control*
Classical Mechanics	Spacecraft Power & Thermal Design*
System Dynamics & Control	Theoretical Mechanics & Astrodynamics*
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