Important Remarks:

- The link of the meeting for all days of Congress is**: https://meet.google.com/uwc-codw-pwj**
- The schedule of the program corresponds to the time of Mexico City. Then, 9:00 am in Mexico City corresponds with:
  - 10:00 hrs   Cuba, Ecuador, Colombia, Perú
  - 11:00 hrs Venezuela, Bolivia
  - 12:00 hrs Brazil, Chile, Argentina, Uruguay
  - 16:00 hrs Spain
- The connection will be available 15 minutes before the start of the session.

Date: November 28ᵗʰ, 2022.

Inaugural Session

9:00 – Opening Speech

Speaker: Dr. Orestes Llanes-Santiago, Chair of the IPC, *Universidad Tecnológica de La Habana José Antonio Echeverría.*

Session 1: Robust and Nonlinear Control

Chair: Dr. Hugo Rodríguez Cortés , *CINVESTAV, Mexico*

9:15 – Robust admissibilization of discrete-time descriptor LPV systems based-on $\mathcal{H}_2$ control

Author: Addison Ríos Bolivar. *Universidad de Los Andes, Venezuela.*

9:30 - Fault tolerance in feedback control loops

Authors: Jose A. Carrazana and Efrain Alcorta , *Universidad Autónoma de Nueva León, México*

9:45 – Robust PID control with anti-windup compensation for ULDS.

Authors: Addison Ríos-Bolivar, Orestes Llanes-Santiago. *Universidad de Los Andes, Venezuela y Universidad Tecnológica de La Habana José Antonio Echeverría, Cuba*

10:00 – Observer-based tracking control for PMSM rooted on port-Hamiltonian systems structural properties.

Authors: F. Ramos-García, C. Granados-Salazar, M. Rojas and G. Espinosa-Pérez, *Universidad Nacional Autónoma de México, México.*

10:15- Sliding mode control base on a generalized reduced fractional order model: theoretical approach

Authors: Antonio Di Teodoro, Diego Ochoa-Tocachi, Hanna Aboukheir and Oscar Camacho. *Universidad San Francisco de Quito, Ecuador*.

10:30 – Tuning and optimization software for nonlinear PI controllers with guaranteed robustness

Authors: Mercedes Ramírez-Mendoza, Liset Mayo Martí, Guillermo González Yero, Pedro Alberto Pérez. *Universidad de Oriente, Cuba, Universidad Politécnica de Valencia, Spain*.

10:45 – Sliding mode control based on a nonlinear PID surface for chemical processes

Authors: Mateo Vázquez, Joseline Yanascual, Marco Herrera, Francisco Rossomando and Oscar Camacho. *Universidad San Francisco de Quito, Ecuador*

Date: November 29th, 2022.

Session 2: Robotic and Autonomous System

Chair: Dr. Luis Hernández Santana. *Universidad Central "Marta Abreu" de Las Villas, Cuba*

9:00 – Path following control of autonomous tractor using nonlinear guidance law

Authors: Alexander Rodríguez Conte, Luis E. Hernández Morales, Luis Hernández Santana, *Universidad Central " Marta Abreu" de Las Villas, Cuba.*

9:15 – A velocity and position tracking controller for wheeled mobile robots

Authors: Carlos Montañez, Javier Pliego-Jiménez, César Cruz-Hernández and Rigoberto Martinez-Clark. *Centro de Investigación Científica y de Educación Superior de Ensenada y Universidad Autónoma de Baja California, México*

9:30 - Integral line-of-sight controller for 3-D path following in presence of marine currents

Authors: Yunier Valeriano Medina, Omar Milián Morón, Leidys Miranda Jiménez and Anailys Hernández Julián, *Universidad Central " Marta Abreu" de Las Villas, Cuba*

9:45 – Battery health-aware MPC planning for autonomous racing vehicles

Authors: Sergio E. Samada, Vicenç Puig and Fatiha Nejjari., *Universidad Politécnica de Cataluña, Spain*.

10:00 – Leader-Follower formation tracking strategies using heterogeneous robots for monitoring and remediation applications.

Authors: Jesus Santiaguillo-Salinas, Hiram N. Garcia-Lozano and Rafael F. Gonzales-Zarate, *Universidad del Papaloapan, México*

Date: November 30th, 2022.

Session 3: Fault diagnosis in Industrial Systems

Chair: Dra. Cristina Verde, *Universidad Nacional Autónoma de México, México*

9:00 – Plenary Conference : Fault diagnosis and tolerant-control using set-based approaches

Speaker: Dr, Vicenç Puig , *Universidad Politécnica de Cataluña, Spain*

9:40 – Exploratory data analysis on the Poincaré features of the electrical torque oriented to the severity diagnosis of a gearbox tooth breakage

Authors: Mariela Cerrada, Maria Victoria Mejía, Renato Ortega, Diego Cabrera and Rene-Vinicio Sánchez, *Universidad Politécnica Salesiana, Ecuador*

9:55 - A proposal of training data selection for remaining job cycle time prediction in industrial monitoring: a real case study

Authors: Alejandro García-Celis, Adriana Villalón Falcón, Randy Piñero-Aguilar, Fernando Suárez-Concepción, Alberto Prieto-Moreno and Orestes Llanes-Santiago, *Universidad Tecnológica de La Habana José Antonio Echeverría; EMSIFARMA, Cuba*

10:10 – Energy-Efficient wavelet transform implementation for fault diagnosis

Authors: Iliover Vega-González and Jorge Ramírez-Beltrán. *Universidad Tecnológica de La Habana José Antonio Echeverría, Cuba*

10:25 – Poincaré Images extracted from vibration signals are useful features for fault classification in a reciprocating compressor.

Authors: Rubén Medina, Mariela Cerrada, Diego Cabrera and René Vinicio Sánchez., *Universidad de Los Andes, Venezuela ; Universidad Politécnica Salesiana, Ecuador.*

10:40 - A novel approach for detection and location of cyber-attacks in water distribution networks.

Authors: Claudia Rodríguez-Martínez, Marcos Quiñones-Grueiro, Antônio J. Silva Neto and Orestes Llanes-Santiago, *Universidad Tecnológica de La Habana José Antonio Echeverría, Cuba; Vanderbit University, USA; Universidade do Estado do Rio de Janeiro, Brazil.*

10:55- Predictive Fault diagnosis for isolated photovoltaic systems using PWM & MPPT charge regulators

Authors: Emilio García-Moreno, Eduardo Quiles-Cucarella, Antonio Correcher-Salvador and Francisco Morant-Anglada, *Universidad Politécnica de Valencia, Spain.*

Date: December 1st, 2022.

Session 4: Modeling, Identification and Delayed Systems

Chair: Dr. Orestes Llanes-Santiago, Universidad Tecnológica de La Habana José Antonio Echeverría, Cuba

9:00 – Model-based efficient selection of centrifugal pumps for simple branch pumping systems

Authors**:** Cláudio C.Pellegrini, Jacqueline Pedrera-Yanes, Orestes Llanes-Santiago and Guillermo Vilalta-Alonso, *Universidade Federal de São João do Rei, Brazil; Universidad Tecnológica de la Habana José Antonio Echeverría, Cuba.*

9:15 – Reinforcement Learning with probabilistic Boolean networks in smart grid models

Authors: Pedro J. Rivera Torres, Carlos Gershenson García, Maria F. Sánchez Puig, Mario Franco and Samir Kanaan Izquierdo, *Universidad Autónoma de México, México; Universidad Politécnica de Cataluña, Spain; Klagenfurt and Wörthersee, Austria.*

9:30 - Selection of model structure using PSO method

Authors: Carlos A. García Vázquez, Ana I. González Santos, *Universidad Tecnológica de La Habana José Antonio Echeverría, Cuba.*

9:45 – Neuro-Adaptive PID Helicopter Controller based on atomic functions

Authors: O.F. García Castro, L.E. Ramos-Velasco, E. Escamilla-Hernández, R. García-Rodríguez, M.A. Vega-Navarrete, C.R. Domínguez Mayorga and L.N. Oliva-Moreno. *Universidad Politécnica Metropolitana de Hidalgo; Instituto Poltécnico Nacional, México*

10:00 – Predictor based control scheme for high-order delayed system with one unstable pole.

Authors: Alán R. Pinerda Higuera, Luis A. Barragan Bonilla, María M. Vargas Mondragón, Basilio del Muro Cuéllar, Juan F. Márquez Rubio, Gonzalo I. Duchén Sánchez *Instituto Politécnico Nacional, México.*

10:15 – Observer based control of a scalar neutral delayed system

Authors: J.F. Márquez Rubio, A. Urquiza Castro, R.J. Vazquez Guerra, B. del Muro Cuéllar, E. Aranda-Bricaire. *Instituto Politécnico Nacional; CINVESTAV, México*

Date: December 2nd, 2022.

Session 5: Low cost systems and Biomedical applications

Chair: Dr. Pedro Rivera Torres, *Universidad Nacional Autónoma de México, Mexico*

9:00 – ESP32 based low-power and low-cost wireless sensor network

Authors**:** Alejandro Perdomo-Campos, Iliover Vega-González and Jorge Ramírez-Beltrán, *Universidad Tecnológica de La Habana José Antonio Echeverría, Cuba*

9:15 – Low-cost portable system for the estimation of air quality

Authors: Erick Hernández-Rodríguez, David Kairúz-Cabrera, Laian Martínez, Rosa A. González-Rivero and Oliver Schalm, *Universidad Central "Marta Abreu" de Las Villas, Cuba; Antwerp Maritime Academy, Belgium.*

9:30 – "José Martí" international airport runway lights system control and monitoring

Authors: Dayra I. Sauri Vázquez and Ariel Cepero Díaz. *Aeropuerto Internacional José Martí, Cuba.*

9:45 – Automatic system to characterization of creatinine by optic measurement `*On line´* in wastes samples during hemodialysis

Authors: Abel Calle-Herranz, Carmenchu Regueiro-Busoch, Carmen B. Busoch-Morlan, Angel Regeiro-Gómez. *Centro Provincial de Electromedicina; Universidad Tecnológica de La Habana José Antonio Echeverría, Cuba.*

10:00 – Automatic system to continuous and differential acquisition of blood pressure during Tilt test.

Authors: Carmenchu Regueiro-Busoch, Y.J. Almeida-Pichardo, L.A. Noa-Lloren, Carmen B. Busoch-Morlan, Angel Regeiro-Gómez**.** *Universidad Tecnológica de La Habana José Antonio Echeverría, Cuba.*

10:15 - Clousure