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Scientific information

- Scopus ID: [57382936700](#)
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- [Personal Website](#)

Research Interests

- Control theory
- Time-delay systems
- Numerical analysis
- Low-order controllers
- Delay-based controllers

Professional Experience

- **Postdoctoral Researcher**
KU Leuven – NUMA (Numerical Analysis and Applied Mathematics Center)
Project: Spectrum-based analysis and control of dynamical systems
Supervisor: Dr. Wim Michiels
- **Postdoctoral Researcher**
ENSTA, Institut Polytechnique de Paris – U2IS
Project: Coordination et contrôle de groupes de robots aériens
Supervisor: Dr. Mario Gleirscher

Education

PhD in Systems and Control Sciences (Paris-Saclay) & PhD in Electrical Engineering (UASLP)
Universidad Autónoma de San Luis Potosí – Laboratoire des Signaux et Systèmes (L2S),
CentraleSupélec

- **Thesis:** *Low-Order Controllers for Time-Delay Systems: Singularities and Implementation Issues*
 - **Advisors:** Dr. Silviu-Iulian Niculescu and Dr. Fernando Méndez Barrios
 - **Jury:**
 - * **President:** Sabine Mondié
 - * **Referees:** Rifat Sipahi, Hitay Özbay
 - * **Examiners:** Wim Michiels, Tomáš Vyhlídal, Martha Belem Saldivar Márquez, Raúl Eduardo Balderas Navarro, and local UASLP committee members.

Master's Degree in Electrical Engineering (2019–2021, GPA: 9.6/10)
Universidad Autónoma de San Luis Potosí

- **Thesis:** *Analytical Design of the Maximum Exponential Decay Rate for a Class of Time-Delay Systems via PI Controllers*
 - **Advisors:** Dr. Fernando Méndez Barrios and Dr. Adrián Ramírez
- **Achievements:**
 - Ranked 1st in class
 - Graduated with honors
- **Summary:** Optimization of decay rates for first-order time-delay systems using PI controllers.

Bachelor's Degree in Electronics Engineering (2014–2019, GPA: 9.1/10)
Universidad Autónoma de San Luis Potosí

- Graduated with honors

Exchange Program in General Engineering (2017–2018)
École Centrale de Lyon

- One-year general engineering program completed under the MEXFITEC academic excellence scholarship.

Teaching _____

Lecturer, Universidad Autónoma de San Luis Potosí (2022) [Spanish](#)

- Applied Mathematics
- Linear Algebra (graduate-level tutorials)

Lecturer, Universidad del Valle de México (2021–2022) [Spanish](#)

- Information Technologies

Lecturer, Bioprepa ABC (2021–2022) [Spanish](#)

- Informatics
- Differential Calculus
- Mathematics
- Physics

Lecturer, ESIEE Paris (2024) [French](#)

- Linear Control Theory (tutorials and laboratories)

Lecturer, CentraleSupélec (2024) [English](#)

- Linear Control Theory (tutorials and laboratories)

Languages _____

- Spanish: Native
- English: Fluent
- French: Fluent
- Italian: Beginner
- Portuguese: Beginner

Technical Skills

Programming and IT

- MATLAB / Simulink
- Mathematica
- Maxima
- Python
- C / C++
- Linux systems

Publications

Journal Articles

- Méndez-Barrios, C.-F., **Torres-García, D.**, Niculescu, S.-I. (2024). Delay-difference approximations of PD controllers: improperly posed systems in the multiple-delay case. *International Journal of Robust and Nonlinear Control*.
- Mazenc, F., Niculescu, S.-I., **Torres-García, D.** (2024). Stability analysis for linear systems with rapidly varying switched delays. *Automatica*.
- **Torres-García, D.**, Méndez-Barrios, C.-F., Niculescu, S.-I. (2024). Stabilization of second-order non-minimum phase systems with delay via PI controllers: spectral abscissa optimization. *IEEE Access*.
- Hernández-Gallardo, J.-A., Méndez-Barrios, C.-F., **Torres-García, D.**, González-Galván, E.-J. (2025). Proportional delayed integral controller for stabilizing second-order non-minimum phase systems. *International Journal of Dynamics and Control*.

Preprints

- **Torres-García, D.**, Michiels, W., A numerical approach to the co-design of PID controllers and low-pass filters for time-delay systems. [Preprint](#).

Conferences

- **Torres-García, D.**, Méndez-Barrios, F., Niculescu, S.-I., Martínez-González, A. (2022). Delay-difference approximation of PD controllers: insights into improperly posed closed-loop systems. *IFAC-PapersOnLine*, 55(40), 79–85.
- **Torres-García, D.**, Méndez-Barrios, F., Niculescu, S.-I. (2023). Some remarks on the implementation of a derivative action via a delay-difference approximation. *ECC 2023 – European Control Conference*.
- **Torres-García, D.**, Méndez-Barrios, F., Niculescu, S.-I. (2024). Impact of delay-difference approximation on PID controllers: stability and performance insights. *MED 2024*, IEEE.
- **Torres-García, D.**, Méndez-Barrios, C.-F., Niculescu, S.-I., Hernández-Gómez, M. (2024). PI control for optimal spectral abscissa in general non-minimum phase systems with time delay. *CoDIT 2024*, IEEE.
- **Torres-García, D.**, Méndez-Barrios, C.-F., Niculescu, S.-I. (2024). Insights into the stabilization of a chain of integrators via delay-difference approximations. *IFAC-PapersOnLine*, 58(27), 19–24.
- Ulaş Ünal, H., **Torres-García, D.**, Niculescu, S.-I. (2025). Robust least-fragile PI controller design for a coupled-tanks system with uncertain time-varying input delay. *IFAC-PapersOnLine*, 59(13), 219–224.

Book Chapters

- **Torres-García, D.**, Méndez-Barrios, F., Ramírez, A. (2021). Maximum exponential decay rate for first-order time-delay systems with PI controllers. In *Advances in Automation and Robotics Research*. Springer.
- **Torres-García, D.**, Hernández-Gallardo, J.-A., Méndez-Barrios, F., Niculescu, S.-I. (2024). Exploring delay-based controllers: a comparative study for stabilizing angular positioning. In *Advances in Automation and Robotics Research*. Springer.
- Hernández-Gallardo, J.-A., **Torres-García, D.**, Moreno-Negrete, E., Garcia Cenaem C. E., González-Galván, E.-J., Méndez-Barrios, F. (2026). Delay-Based State Feedback Control for the Inertial Wheel Pendulum. In *Advances in Automation and Robotics Research*. Springer.

Awards

- MEXFITEC Academic Excellence Scholarship (2017)
- Best Young Author Paper Award Finalist, 18th IFAC Workshop on Time-Delay Systems
- Best PhD Thesis Award, Faculty of Engineering, Universidad Autónoma de San Luis Potosí

Other Activities

- **Seminar Organization**
 - GISRe – Mexican Seminar on Time-Delay Systems (2023-2024):
<https://sites.google.com/view/gisr>
 - Séminaire d'Automatique du Plateau de Saclay (2023-2024):
<https://icode-seminars.github.io/>
- **Peer Reviewing**
 - Applied Mathematics and Computation
 - Kybernetika
 - Journal of Difference Equations and Applications
 - Systems and Control Letters
 - Several international conferences

Scientific references

- Prof. Wim Michiels, full professor, Numerical Analysis and Applied Mathematics (NUMA) center, KU Leuven
Wim.Michiels@kuleuven.be
- Prof. Silviu-Iulian Niculescu, Research Director, French National Center for Scientific Research (CNRS), Laboratory of Signals and Systems (L2S), CentraleSupélec
silviu.niculescu@centralesupelec.fr
- Prof. Thiago Alves Lima, associate professor, Aeronautics Institute of Technology, Brazil
thiago.lima@gp.ita.br
- Prof. Fernando Méndez Barrios, full professor, Universidad Autónoma de San Luis Potosí (UASLP), Facultad de Ingeniería
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