

Listă de publicații

Zs. Lendek

December 4, 2018

Cărți

- B-1. Zs. Lendek, T. M. Guerra, R. Babuška, and B. De Schutter. “Stability analysis and nonlinear observer design using Takagi-Sugeno fuzzy models”, Springer Germany, Series “Studies in Fuzziness and Soft Computing”, Vol. 262, ISBN 978-3-642-16775-1.
- B-2. Zs. Lendek, Nonlinear control using TS models, UTPress, 2013
- B-3. Zs. Lendek, Optimization exercises, UTPress, 2013, ISBN 978-973-662-853-5

Capitole de cărți

- BC-1. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, Observer Design for Robotic Systems via Takagi-Sugeno Models and Linear Matrix Inequalities. In *Handling uncertainty and networked structure in robot control*, series Studies in Systems, Decision and Control, L. Busoniu and L. Tamas, Editors, pages 103-128. Springer International Publishing, 2015.
- BC-2. Zs. Lendek, P. Raica, J. Lauber, T. M. Guerra. “Observer design for discrete-time switching nonlinear models”, in *Hybrid Dynamical Systems*, series “Lecture Notes in Control and Information Sciences”, Volume 457, 2015, pp. 27-58

Articole de revistă

- J-1. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, “An alternative LMI static output feedback control design for discrete-time nonlinear systems represented by Takagi-Sugeno models”. *ISA Transactions*, 2018. Accepted.
- J-2. Zs. Lendek, Z. Nagy, J. Lauber, “Local stabilization of discrete-time TS descriptor systems. *Engineering Applications of Artificial Intelligence*”, vol. 67, pages 409-418, 2018.
- J-3. Zs. Lendek, P. Raica, J. Lauber, T. M. Guerra, “Finding a stabilizing switching law for switching TS models”. *International Journal of Systems Science*, vol. 47, pages 2762-2772, 2016.
- J-4. V. Estrada-Manzo, T. M. Guerra, Zs. Lendek, “Generalized observer design for discrete-time T-S descriptor models.” *Neurocomputing*, vol. 182, pages 210-220, 2016.
- J-5. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, Ph. Pudlo, “Controller design for discrete-time descriptor models: a systematic LMI approach.” *IEEE Transactions on Fuzzy Systems*, vol. 23, no. 5, pages 1608-1621, 2015.
- J-6. T. M. Guerra, V. Estrada-Manzo, Zs. Lendek, “Observer design for Takagi-Sugeno descriptor models: an LMI approach”. *Automatica*, vol. 52, no. 2, pages 154-159, 2015.
- J-7. Zs. Lendek, T. M. Guerra, J. Lauber, “Controller design for TS models using non-quadratic Lyapunov functions”. *IEEE Transactions on Cybernetics*, vol. 45, no. 3, pages 453-464, 2015.

- J-8. P. Stano, A. den Dekker, Zs. Lendek, R. Babuška. “Convex saturated particle filter”, *Automatica*, vol. 50, no. 10, pages 2494-2503, 2014.
- J-9. Zs. Lendek, P. Raica, B. De Schutter, and R. Babuška. “Analysis and design for continuous-time string-connected TS systems”, *Journal of the Franklin Institute*, Volume 351, 2014, Pages 3577-3592.
- J-10. Zs. Lendek, A. Sala, P. García, R. Sanchis. “Experimental application of Takagi-Sugeno observers and controllers in a 3DOF quadrotor”, *Journal of Control Engineering and Applied Informatics*, Volume 15, December 2013, Pages 3-14.
- J-11. P. Stano, Zs. Lendek, J. Braaksma, R. Babuška, and C. de Keizer. “Parametric Bayesian adaptive filters for nonlinear dynamical systems: A survey”, *IEEE Transactions on Cybernetics*, Volume 43, December 2013, Pages 1607-1624.
- J-12. Zs. Lendek, J. Lauber, and T. M. Guerra. “Periodic Lyapunov functions for periodic TS systems”, *Systems & Control Letters*, Volume 62, Issue 4, April 2013, Pages 303-310.
- J-13. P. Stano, Zs. Lendek, and R. Babuška, “Saturated Particle Filter: Almost Sure Convergence and Improved Resampling”, *Automatica*, Volume 49, Issue 1, January 2013, Pages 147–159.
- J-14. Zs. Lendek, R. Babuška, and B. De Schutter. “Sequential stability analysis and observer design for distributed TS fuzzy systems”, *Fuzzy Sets and Systems*, Volume 174, Issue 1, August 2011, Pages 1–30.
- J-15. A. B. Cara, H. Pomares, I. Rojas, Zs. Lendek, and R. Babuka. “Online Self-Evolving Fuzzy Controller with Global Learning Capabilities”, *Evolving Systems*, Volume 1, Issue 4, 2010, Pages 225-239.
- J-16. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability bounds for fuzzy estimation and control”, *Journal of Control Engineering and Applied Informatics*, Volume 12, Issue 3, September 2010, Pages 3–12.
- J-17. Zs. Lendek, J. Lauber, T. M. Guerra, R. Babuška, and B. De Schutter. “Adaptive observers for TS fuzzy systems with unknown polynomial inputs”, *Fuzzy Sets and Systems*, Volume 161, Issue 15, August 2010, Pages 2043–2065.
- J-18. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability of cascaded fuzzy systems and observers”, *IEEE Transactions on Fuzzy Systems*, Volume 17, Issue 3, June 2009, Pages 641–653.
- J-19. Zs. Lendek, R. Babuška, J. Braaksma, and C. de Keizer. “Decentralized estimation of overflow losses in a hopper-dredger”. *Control Engineering Practice*, Volume 16, Issue 4, April 2008, Pages 392–406.
- J-20. Zs. Lendek, R. Babuška, and B. De Schutter. “Distributed Kalman filtering for cascaded systems”. *Engineering Applications of Artificial Intelligence*, Volume 21, Issue 3, April 2008, Pages 457–469.

Articole de conferință

- C-1. T. Laurain, Zs. Lendek, J. Lauber, R. M. Palhares, “Transforming variable transport delays into fixed ones: An application to a conveyor belt problem”. In *Proceedings of the 2018 Annual American Control Conference (ACC)*, pages 3969-3974, Milwaukee, WI, USA, June 2018.

- C-2. T. Laurain, J. Lauber, Zs. Lendek, R. M. Palhares, "Air-fuel ratio fuzzy controller handling delay: Comparison with a PI/Smith". In *Proceedings of the 2018 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR)*, pages 1-6, Cluj-Napoca, Romania, May 2018.
- C-3. Z. Nagy, E. Pall, Zs. Lendek, "Unknown input observer for a robot arm using TS fuzzy descriptor models". In *Proceedings of the 2017 IEEE Conference on Control Technology and Applications*, pages 939-944, Hawaii, USA, August 2017.
- C-4. T. Laurain, Zs. Lendek, J. Lauber, R. M. Palhares, "A new air-fuel ratio model fixing the transport delay: validation and control". In *Proceedings of the 2017 IEEE Conference on Control Technology and Applications*, pages 1904-1909, Hawaii, USA, August 2017.
- C-5. T. Laurain, Zs. Lendek, J. Lauber, R. M. Palhares, "Transformer les retards de transport variables en retards fixes: Une application au probleme du convoyeur (in French)". In *Proceedings of the 2017 Rencontre sur la Logique Floue et ses Applications*, pages 1-8, Amiens, France, October 2017.
- C-6. B. Marx, Zs. Lendek, "Local observer design for discrete-time TS systems". In *Preprints of the 2017 IFAC World Congress*, pages 873-878, Toulouse, France, July 2017.
- C-7. Z. Nagy, Zs. Lendek, "Quadcopter modeling and control". In *Proceedings of the Journees Francophones sur la Planification, la Decision et l'Apprentissage pour la conduite de systemes*, pages 1-2, Caen, France, July 2017.
- C-8. S. Beyhan, F. Sarabi, Zs. Lendek, R. Babuska, "Takagi-Sugeno fuzzy payload estimation and adaptive control". In *Preprints of the 2017 IFAC World Congress*, pages 867-872, Toulouse, France, July 2017.
- C-9. Zs. Lendek, J. Lauber, Local quadratic and nonquadratic stabilization of discrete-time TS fuzzy systems. In *Proceedings of the 2016 IEEE World Congress on Computational Intelligence*, pages 1-6, Vancouver, Canada, July 2016.
- C-10. Zs. Lendek, J. Lauber, Local stability of discrete-time TS fuzzy systems. In *Proceedings of the 4th IFAC International Conference on Intelligent Control and Automation Sciences*, pages 1-6, Reims, France, June 2016.
- C-11. N. Hodasz, V. Bradila, I. Nascu, Zs. Lendek, Modeling and parameter estimation for an activated sludge wastewater treatment process. In *Proceedings of the 2016 IEEE International Conference on Automation, Quality and Testing, Robotics*, pages 1-6, Cluj-Napoca, Romania, May 2016.
- C-12. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, Unknown input estimation for nonlinear descriptor systems via LMIs and Takagi-Sugeno models. In *Proceedings of the 54th IEEE Conference on Decision and Control*, pages 1-6, Osaka, Japan, December 2015.
- C-13. V. Estrada-Manzo, T. M. Guerra, Zs. Lendek, Static output feedback control for continuous-time TS descriptor models: decoupling the Lyapunov function. In *Proceedings of the 2015 IEEE International Conference on Fuzzy Systems*, pages 1-6, Istanbul, Turkey, August 2015.
- C-14. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, Improving the observer design for discrete-time TS descriptor models under the quadratic framework. In *Proceedings of the IFAC Conference on Embedded Systems, Computational Intelligence and Telematics in Control*, pages 1-6, Maribor, Slovenia, June 2015.

- C-15. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, An LMI approach for observer design for Takagi-Sugeno descriptor models. In *Proceedings of the 53rd IEEE Conference on Decision and Control*, pages 860-865, Los Angeles, CA, USA, December 2014.
- C-16. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, “ H_∞ control for discrete-time Takagi-Sugeno descriptor models: a delayed approach”. *23e Rencontres Francophones sur la Logique Floue et ses Applications*, Ajaccio, France, October 2014.
- C-17. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra, “An LMI approach for observer design for Takagi-Sugeno descriptor models”. *53rd IEEE Conference on Decision and Control*, Los Angeles, CA, USA, December 2014.
- C-18. Zs. Lendek, P. Raica, J. Lauber, and T. M. Guerra. “Nonquadratic stabilization of switching TS systems”, *Preprints of the 2014 IFAC World Congress*, pages 7970-7975, Cape Town, South Africa, August 2014, **invited paper**.
- C-19. V. Estrada-Manzo, Zs. Lendek, T. M. Guerra. “Discrete-time Takagi-Sugeno descriptor models: observer design”, *Preprints of the 2014 IFAC World Congress*, pages 7965-7969, Cape Town, South Africa, August 2014, **invited paper**.
- C-20. Zs. Lendek, P. Raica, J. Lauber, and T. M. Guerra. “Observer design for switching nonlinear systems”, *Proceedings of the 2014 IEEE World Congress on Computational Intelligence*, pages 1-6, Beijing, China, July 2014, **invited paper**.
- C-21. V. Estrada-Manzo, T. M. Guerra, Zs. Lendek, Ph. Pudlo. “Discrete-time Takagi-Sugeno descriptor models: controller design”, *Proceedings of the 2014 IEEE World Congress on Computational Intelligence*, pages 1-5, Beijing, China, July 2014, **invited paper**.
- C-22. V. Estrada-Manzo, T. M. Guerra, Zs. Lendek. “An LMI approach for observer design for Takagi-Sugeno descriptor models”. *Proceedings of the 2014 IEEE International Conference on Automation, Quality and Testing, Robotics*, pages 1-6, Cluj-Napoca, Romania, May 2014.
- C-23. Zs. Lendek, J. Lauber, T. M. Guerra, and P. Raica. “Stability analysis of switching TS models using α -samples approach”, *Proceedings of the 3rd IFAC International Conference on Intelligent Control and Automation Science*, pages 207-211, Chengdu, China, September 2013, **invited paper**.
- C-24. P. Petrehuş, Zs. Lendek, and P. Raica. “Fuzzy modeling and control of a 3D crane”, *Proceedings of the 3rd IFAC International Conference on Intelligent Control and Automation Science*, pages 201-206, Chengdu, China, September 2013, **invited paper**.
- C-25. Zs. Lendek, J. Lauber, T. M. Guerra, and P. Raica. “On stabilization of discrete-time periodic TS systems”, *Proceedings of the 2013 IEEE International Conference on Fuzzy Systems*, pages 1–6, Hyderabad, India, July 2013, **invited paper**.
- C-26. V. Estrada-Manzo, T. M. Guerra, Zs. Lendek, and M. Bernal. “Improvements on non-quadratic stabilization of continuous-time Takagi-Sugeno descriptor models”, *Proceedings of the 2013 IEEE International Conference on Fuzzy Systems*, pages 1–6, Hyderabad, India, July 2013, **invited paper**.
- C-27. S. Bindiganavile Nagesh, Zs. Lendek, A. A. Khalate, and R. Babuška. “Adaptive fuzzy observer and robust controller for a 2-DOF robot arm”. *IEEE World Congress on Computational Intelligence*, pages 149–155, Brisbane, Australia, June 2012, **invited paper**.

- C-28. Zs. Lendek, T. M. Guerra, and J. Lauber. “Construction of extended Lyapunov functions and control laws for discrete-time TS systems”. *IEEE World Congress on Computational Intelligence*, pages 286–291, Brisbane, Australia, June 2012, **invited paper**.
- C-29. Zs. Lendek, T. M. Guerra, and J. Lauber. “Switching fuzzy observers for periodic TS systems”. *2012 IEEE International Conference on Automation, Quality and Testing, Robotics*, Cluj, Romania, May 2012.
- C-30. Zs. Lendek, J. Lauber, and T. M. Guerra. “Switching Lyapunov functions for periodic TS systems”. accepted to the *1st IFAC Conference on Embedded Systems, Computational Intelligence and Telematics in Control*, Würzburg, Germany, April 2012.
- C-31. Zs. Lendek, A. Berna, J. Guzmán-Giménez, A. Sala, P. García. “Application of Takagi-Sugeno observers for state estimation in a quadrotor”. *50th IEEE Conference on Decision and Control and European Control Conference*, pages 2278–2283, Orlando, Florida, December 2011.
- C-32. S. Beyhan, Zs. Lendek, R. Babuška, M. Wisse, M. Alçı. “Control of a Robot Manipulator with Varying Payload Mass”. *50th IEEE Conference on Decision and Control and European Control Conference*, pages 2278–2283, Orlando, Florida, December 2011.
- C-33. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability analysis and observer design for string-connected TS systems”. Preprints of the *IFAC World Congress*, pages 12795-12800, Milano, Italy, September 2011, **invited paper**.
- C-34. P. Stano, Zs. Lendek, R. Babuška. “Saturated particle filter”. *Proceedings of the 2011 American Control Conference*, pages 1819–1824, San Francisco, California, USA, June 2011.
- C-35. S. Beyhan, M. Alçı, Zs. Lendek, and R. Babuška. “TS bulanik gözetleyici bilinmeyen yük tahmini ve servo sistem kontrolü”, *Proceedings of the National Meeting of the Turkish National Committee of Automatic Control*, pages 315-320, Izmir, Turkey, September 2011.
- C-36. Z. Hidayat, Zs. Lendek, R. Babuška, and B. De Schutter. “Fuzzy observer for state estimation of the METANET traffic model”. *Proceedings of the 13th International IEEE Conference on Intelligent Transportation Systems*, pages 19–24, Madeira, Portugal, September 2010.
- C-37. P. Stano, Zs. Lendek, R. Babuška, J. Braaksma, and C. de Keizer. “Particle filters for the estimation of the average grain diameter of the material excavated by a hopper dredger”. *Proceedings of the 2010 Multiconference on Systems and Control*, pages 292–297, Yokohama, Japan, September 2010.
- C-38. A. Belén Cara, Zs. Lendek, R. Babuška, H. Pomares, and I. Rojas. “Online self-organizing adaptive fuzzy controller: application to a nonlinear servo system”, *Proceedings of the IEEE World Congress on Computational Intelligence*, pages 2491–2498, Barcelona, Spain, July 2010, **invited paper**.
- C-39. Zs. Lendek, T. M. Guerra, and R. Babuška. “On non-PDC local observers for TS fuzzy systems”, *Proceedings of the IEEE World Congress on Computational Intelligence*, pages 2436–2442, Barcelona, Spain, July 2010, **invited paper**.
- C-40. Zs. Lendek, R. Babuška, and B. De Schutter. “Fuzzy models and observers for freeway traffic state tracking”, *Proceedings of the American Control Conference*, pages 2278–2283, Baltimore, Maryland, USA, July 2010, **invited paper**.

- C-41. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability bounds for fuzzy estimation and control – Part II: Output-feedback control”, *Proceedings of the 2010 IEEE International Conference on Automation, Quality and Testing, Robotics*, pages 1–6, Cluj, Romania, May 2010, **Award: best paper in the track “Control Systems”**
- C-42. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability bounds for fuzzy estimation and control – Part I: State estimation”, *Proceedings of the 2010 IEEE International Conference on Automation, Quality and Testing, Robotics*, pages 1–6, Cluj, Romania, May 2010, **Award: best paper in the track “Control Systems”**.
- C-43. H. Kerkeni, J. Lauber, Zs. Lendek, and T. M. Guerra. “Individual cylinder air/fuel ratio observer on IC engine using Takagi-Sugeno’s fuzzy model”, In *Proceedings of the 2008 IEEE Vehicle Power and Propulsion Conference*, pages 1–6, Harbin, China, September 2008.
- C-44. H. Kerkeni, J. Lauber, Zs. Lendek, and T. M. Guerra. “Estimation de la richesse par cylindre dun moteur a combustion interne”, *Proceedings of Conference Internationale Francophone d’Automatique*, pages 1–6, Bucharest, Romania, September 2008.
- C-45. Zs. Lendek, K. M. van Schagen, R. Babuška, A. Veersma, and B. De Schutter. “Cascaded parameter estimation for a water treatment plant using particle filters”, In *Preprints of the IFAC World Congress*, pages 10857–10862, Seoul, Korea, July 2008.
- C-46. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability analysis and observer design for decentralized TS fuzzy systems”, *Proceedings of the IEEE World Congress on Computational Intelligence*, pages 631–636, Hong Kong, China, June 2008, **invited paper**.
- C-47. Zs. Lendek, R. Babuška, and B. De Schutter. “TS fuzzy controllers for cascaded systems”. In Guerra, T. M., editor, *Proceedings of 3rd IFAC Workshop on Advanced Fuzzy and Neural Control*, pages 1–6, Valenciennes, France, October 2007.
- C-48. Zs. Lendek, R. Babuška, and B. De Schutter. “Stability of cascaded Takagi-Sugeno fuzzy systems”. In *Proceedings of IEEE International Conference on Fuzzy Systems*, pages 505–510, London, UK, July 2007.
- C-49. Zs. Lendek, R. Babuška, and B. De Schutter. “Distributed Kalman filtering for multi-agent systems”. In *Proceedings of the European Control Conference*, pages 2193–2200, Kos, Greece, July 2007.
- C-50. A. Hegyi, L. Mihaylova, R. Boel, and Zs. Lendek. “Parallelized particle filtering for freeway traffic state tracking”. In *Proceedings of the European Control Conference*, pages 2442–2449, Kos, Greece, July 2007.
- C-51. R. Babuška, Zs. Lendek, J. Braaksma, and C. de Keizer. “Particle filtering for on-line estimation of overflow losses in a hopper dredger”. In *Proceedings of the American Control Conference*, pages 5751–5756, Minneapolis, Minnesota, USA, June 2006.
- C-52. Zs. Lendek, P. Raica. “Numerical simulation of 15N isotope separation processes by ion-exchange”. In *Proceedings of the 2004 IEEE-TTTC International Conference on Automation, Quality and Testing, Robotics*, Cluj-Napoca, Romania, May 2004.

Teze și disertații

- T-1. Zs. Lendek. “Distributed fuzzy and stochastic observers for nonlinear Systems”, PhD thesis, ISBN 978-90-9023990-3, 186 pages, Delft University of Technology, The Netherlands, 2009

- T-2. Zs. Lendek. “Modeling and dynamical simulation of chromatographic separation processes”, postgraduate thesis (in Romanian), Technical University of Cluj-Napoca, Romania, 2004.
- T-3. Zs. Lendek. “Vowel recognition using neural networks”, BSc. thesis (in Hungarian), Babeş-Bolyai University of Cluj-Napoca, Romania, 2004.
- T-4. Zs. Lendek. “Modeling and simulation of the ^{15}N isotopes separation process by ion-exchange”, MSc. thesis (in Romanian), Technical University of Cluj-Napoca, Romania, 2003.

A handwritten signature in black ink, reading "Lendek", with a stylized flourish at the end.