

Listă de publicații

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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*, vol. 84, pages 104-110, 2019.
- 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.
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- 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.

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- C-2. Z. Nagy, A. Matyas, Zs. Lendek, “Stabilization of TS fuzzy systems with time-delay and nonlinear consequents”. Accepted *2020 IFAC World Congress*, pages 1-6, Berlin, Germany, July 2020.
- C-3. Z. Nagy, Zs. Lendek, L. Busoniu, “Control and estimation for mobile sensor-target problems with distance-dependent noise”. Accepted to the *2020 American Control Conference*, pages 1-6, Denver, Colorado, USA, July 2020.
- C-4. Z. Nagy, Zs. Lendek, “Observer design for discrete-time TS fuzzy systems with local nonlinearities”. Accepted to the *2020 European Control Conference*, pages 1-6, Saint Petersburg, Russia, May 2020.
- C-5. O. Boncalo, A. Amaricai, Zs. Lendek, “Configurable hardware accelerator architecture for Takagi-Sugeno fuzzy controller”. In *Proceedings of the 2019 Euromicro Conference on Digital System Design*, pages 96-101, Chalkidiki, Greece, August 2019.
- C-6. Z. Nagy, Zs. Lendek, “Observer-based controller design for Takagi-Sugeno fuzzy systems with local nonlinearities”. In *Proceedings of the 2019 IEEE International Conference on Fuzzy Systems*, pages 1-6, New Orleans, USA, June 2019.
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- C-9. 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.
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- C-11. 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-12. 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-13. 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.

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- C-17. 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-18. 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-19. 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-20. 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.
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- C-27. 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**.
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- C-31. 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**.
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- C-40. 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.
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- C-45. 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**.
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- C-48. 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”**.
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- C-50. 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.
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- C-55. 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-56. 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-57. 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-58. Zs. Lendek, P. Raica. “Numerical simulation of ^{15}N 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), Babeș-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.