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Ing. Elena-Lorena Constantin (căș. HEDREA) student doctorand

1. Lucrări științifice publicate în reviste indexate Web of Science-WoS (ISI)

1. C.-A. Bojan-Dragos, M.-B. Radac, R.-E. Precup, **E.-L. Hedrea** and O.-M. Tanasoiu, "Gain-Scheduling control solutions for magnetic levitation systems," *Acta Polytechnica Hungarica*, vol. 15, no. 5, pp. 89-108, 2018 (WOS:000449055300006),
2. **E.-L. Hedrea**, R.-E. Precup and C.-A. Bojan-Dragos, "Results on tensor product-based model transformation of magnetic levitation systems," *Acta Polytechnica Hungarica*, vol. 16, no. 9, pp. 93-111, 2019 (WOS:000492691500006),
3. **E.-L. Hedrea**, R.-E. Precup, E.M. Petriu, C.-A. Bojan-Dragos and C. Hedrea, "Tensor product-based model transformation approach to cart position modeling and control in pendulum-cart systems," *Asian Journal of Control*, vol. 23, no. 3, pp. 1238-1248, 2021 (WOS:000627552900001),
4. **E.-L. Hedrea**, R.-E. Precup, R.-C. Roman and E.M. Petriu, "Tensor product-based model transformation approach to tower crane systems modeling," *Asian Journal of Control*, vol. 23, no. 3, pp. 1313-1323, 2021 (WOS:000629323100001).

2. Lucrări științifice publicate în volumele unor manifestări științifice (Proceedings) indexate Web of Science-WoS (ISI) Proceedings

1. **E.-L. Hedrea**, C.-A. Bojan-Dragos, R.-E. Precup, R.-C. Roman, E.-M. Petriu and C. Hedrea, "Tensor product-based model transformation for position control of magnetic levitation systems," in *Proc. IEEE 26th International Symposium on Industrial Electronics*, Edinburgh, Scotland, 2017, pp. 1141-1146 (WOS:000426794000180),
2. **E.-L. Hedrea**, C.-A. Bojan-Dragos, R.-E. Precup and T.-A. Teban, "Tensor product-based model transformation for level control of vertical three tank systems," in *Proc. IEEE 21st International Conference on Intelligent Engineering Systems*, Larnaca, Cyprus, 2017, pp. 113-118 (WOS:000418333800019),
3. **E.-L. Hedrea**, C.-A. Bojan-Dragos, R.-E. Precup and E.M. Petriu, "Comparative study of control structures for maglev systems," in *Proc. IEEE 18th International Power Electronics and Motion Control Conference, Budapest, Hungary*, 2018, pp. 657-662 (WOS:000462062900100),
4. **E.-L. Hedrea**, R.-E. Precup, C.-A. Bojan-Dragos and C. Hedrea, "Tensor product-based model transformation technique applied to modeling vertical three tank systems," in *Proc. IEEE 12th International Symposium on Applied Computational Intelligence and Informatics*, Timisoara, Romania, 2018, pp. 63-68 (WOS:000448144200010),
5. **E.-L. Hedrea**, R.-E. Precup, C.-A. Bojan-Dragos, R.-C. Roman, O. Tanasoiu and M. Marinescu, "Cascade control solutions for maglev systems," in *Proc. 22nd International Conference on System Theory, Control and Computing*, Sinaia, Romania, 2018, pp. 20-26 (WOS:000465109800004),
6. C.-A. Bojan-Dragos, A.-I. Szedlak-Stinean, R.-E. Precup, L. Gurgui, **E.-L. Hedrea** and I.-C. Mituletu, "Control solutions for vertical three-tank systems," in *Proc. 12th International Symposium on Applied Computational Intelligence and Informatics*, Timisoara, Romania, 2018, pp. 593-598 (WOS:000448144200103),
7. **E.-L. Hedrea**, R.-E. Precup, C.-A. Bojan-Dragos, C. Hedrea, D. Ples and D. Popovici, "Cascade control solutions for level control of vertical three tank systems," in *Proc. 13th International Symposium on Applied Computational Intelligence and Informatics*, Timisoara, Romania, 2019, pp. 353-358 (WOS:000610436600062),
8. **E.-L. Hedrea**, R.-E. Precup, C.-A. Bojan-Dragos, E.M. Petriu and R.-C. Roman, "Tensor Product-based model transformation and sliding mode control of electromagnetic actuated clutch system," in *Proc. 2019 International Conference on Systems, Man and Cybernetics*, Bari, Italy, 2019, pp. 1402-1407 (WOS:000521353901072),
9. **E.-L. Hedrea**, R.-E. Precup, C.-A. Bojan-Dragos and O. Tanasoiu, "Tensor product-based model transformation technique applied to modeling magnetic levitation systems," in *Proc. IEEE 23rd International Conference on Intelligent Engineering Systems*, Gödöllő, Hungary, 2019, pp. 179-184 (WOS:000589668400030)
10. **E.-L. Hedrea**, R.-E. Precup, C.-A. Bojan-Dragos and C. Hedrea, "TP-based fuzzy control solutions for magnetic levitation systems," in *Proc. 23rd International Conference on System Theory Control and Computing*, Sinaia, Romania, 2019, pp. 809-814 (WOS:000590181100136).

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ANEXE

A) Pentru Lucrări publicate indexate din Web of Science-WoS (ISI) (secțiunile 1-2).

i) Extras listat din Web of Science cu lucrări indexate (ISI).

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- 1 **Tensor product-based model transformation approach to tower crane systems modeling** 17 Citations 63 References
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May 2021 | Mar 2021 (Early Access) | [ASIAN JOURNAL OF CONTROL](#) 23 (3), pp.1313-1323
[Enriched Cited References](#)
This paper presents the application of the tensor product (TP)-based model transformation approach to produce Tower CRane (TCR) systems models. The modeling approach starts with a nonlinear model of TCR systems as representative multi-input-multi-output controlled processes. A linear parameter-varying model is next derived, and the modeling steps specific to TP-based model transformation are p... Show more
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- 2 **Tensor product-based model transformation approach to cart position modeling and control in pendulum-cart systems** 1 Citation 56 References
[Hedrea, EL; Precup, BE; \(-\); Hedrea, C](#)
May 2021 | Mar 2021 (Early Access) | [ASIAN JOURNAL OF CONTROL](#) 23 (3), pp.1238-1248
[Enriched Cited References](#)
The paper presents the application of the tensor product (TP)-based model transformation technique to model and control the cart position of single-input multi-output pendulum-cart systems (PCSs). The modeling is first carried out. The derived TP model, the nonlinear model of PCS, and the laboratory equipment are tested in the same open-loop scenario, and their corresponding outputs are collect... Show more
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- 3 **TP-Based Fuzzy Control Solutions for Magnetic Levitation Systems** 44 References
[Hedrea, EL; Precup, BE; \(-\); Hedrea, C](#)
23rd International Conference on System Theory, Control and Computing (ICSTCC) 2019 | 2019 23RD INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), pp.809-814
In this paper two cascade control system (CCS) structures designed in order to control the position of the magnetic sphere of a Magnetic levitation laboratory equipment are presented. The proposed CCS structures consist of a TP-based controller (TP-C) in the inner control loop and a Proportional Integral Fuzzy Controller (PI-FC) with integration of controller output (Fuzzy-OT-TP-CS) and a PI-FC... Show more
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- 4 **Tensor Product-Based Model Transformation Technique Applied to Modeling Magnetic Levitation Systems** 1 Citation 47 References
[Hedrea, EL; Precup, BE; \(-\); Tanasoiu, D](#)
23rd IEEE International Conference on Intelligent Engineering Systems (INES) 2019 | 2019 IEEE 23RD INTERNATIONAL CONFERENCE ON INTELLIGENT ENGINEERING SYSTEMS (INES 2019), pp.179-184
The derivation of a Tensor Product (TP)-based model of magnetic levitation systems using the TP-based model transformation method is proposed. The TP model approximates the behavior of the plant, but exhibiting a numerical approximation error. Finally, the behavior of the TP model is compared to the laboratory equipment behavior taking into consideration two testing scenarios. The experimental... Show more
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- 5 **Tensor Product-Based Model Transformation and Sliding Mode Control of Electromagnetic Actuated Clutch System** 5 Citations 36 References
[Hedrea, EL; Precup, BE; \(-\); Boman, BC](#)
IEEE International Conference on Systems, Man and Cybernetics (SMC) 2019 | 2019 IEEE INTERNATIONAL CONFERENCE ON SYSTEMS, MAN AND CYBERNETICS (SMC), pp.1402-1407
This paper suggests two combinations of Tensor Product (TP)-based model transformation plus sliding mode control applied to the position control of nonlinear electromagnetic actuated clutch systems. Two cascade control system structures that consist of a TP-based controller in the inner control loop and a sliding mode-based controller in the outer control loop are presented. The proposed contro... Show more
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Funding Agencies	<input type="checkbox"/> 8 <input checked="" type="checkbox"/>	Control Solutions for Vertical Three-Tank Systems Bojan-Drageo, CA; Szedlak-Szinean, AI (-); Minuletu, IC 12th IEEE International Symposium on Applied Computational Intelligence and Informatics (SACI) 2018 2018 IEEE 12TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI) , pp.993-998 The paper presents the design of several classical low-cost control systems (CSs) with Integral Controllers (I), Proportional-Integral Controller (PI), Proportional-Integral-Derivative Controller (PID) and adaptive Proportional-Integral control systems dedicated to the level control of vertical three-tank systems (V3TS). To design the proposed control solutions, the least-squares identification ... Show more ***	6 Citations 29 References Related records
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<input type="checkbox"/> 13 <input checked="" type="checkbox"/>	Tensor Product-Based Model Transformation for Level Control of Vertical Three Tank Systems Hedrea, EL; Bojan-Drageo, CA (-); Teban, TA 21st IEEE International Conference on Intelligent Engineering Systems (INES) 2017 2017 IEEE 21ST INTERNATIONAL CONFERENCE ON INTELLIGENT ENGINEERING SYSTEMS (INES) , pp.113-118 This paper presents a Tensor Product (TP)-based model transformation as an application to the level control of vertical three tank systems. At first the TP model of the plant is obtained from the linear parameter-varying model of the controlled process by applying the TP-based model transformation. The TP controller design is then based by a parallel distributed compensation technique. The obta ... Show more ***	5 Citations 44 References Related records
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