LISTA PUBLICAȚIILOR REZULTATE ÎN URMA CERCETĂRII DOCTORALE, PUBLICATE SAU ACCEPTATE SPRE PUBLICARE, SUB AFILIERE UPT

Ing. *Elena-Lorena Constantin (căs. HEDREA)* student doctorand

1. Lucrări ştiinţifice 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 Polytehnica 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 Polytehnica 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 ştiinţifice publicate în volumele unor manifestări ştiinţifice (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*, Gödöllö, 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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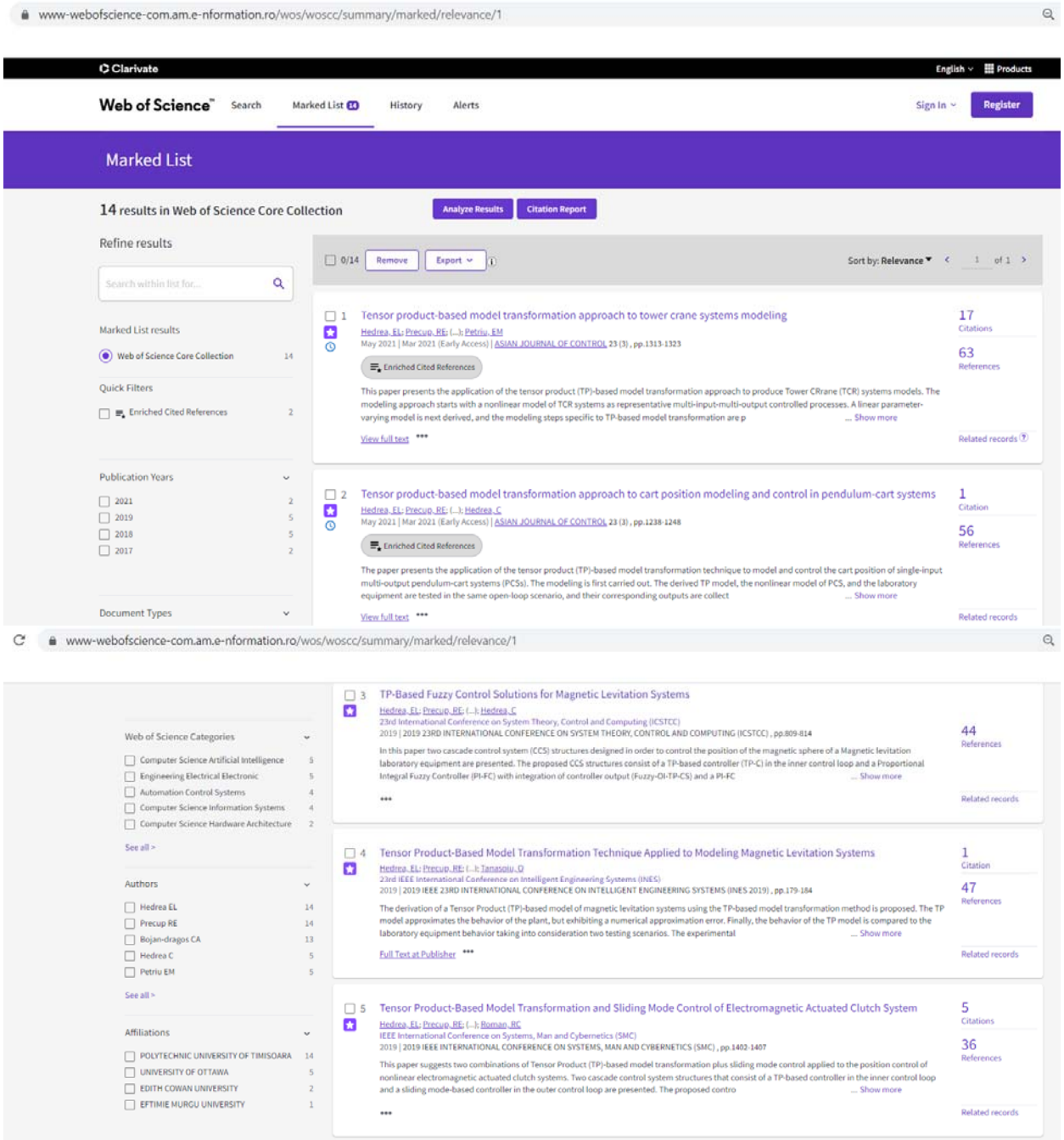
AVIZAT, Conducător științific	ÎNTOCMIT, Student doctorand
Prof.univ.dr.ing. Radu-Emil Precup	*ing. Elena-Lorena Constantin (căs. Hedrea)*

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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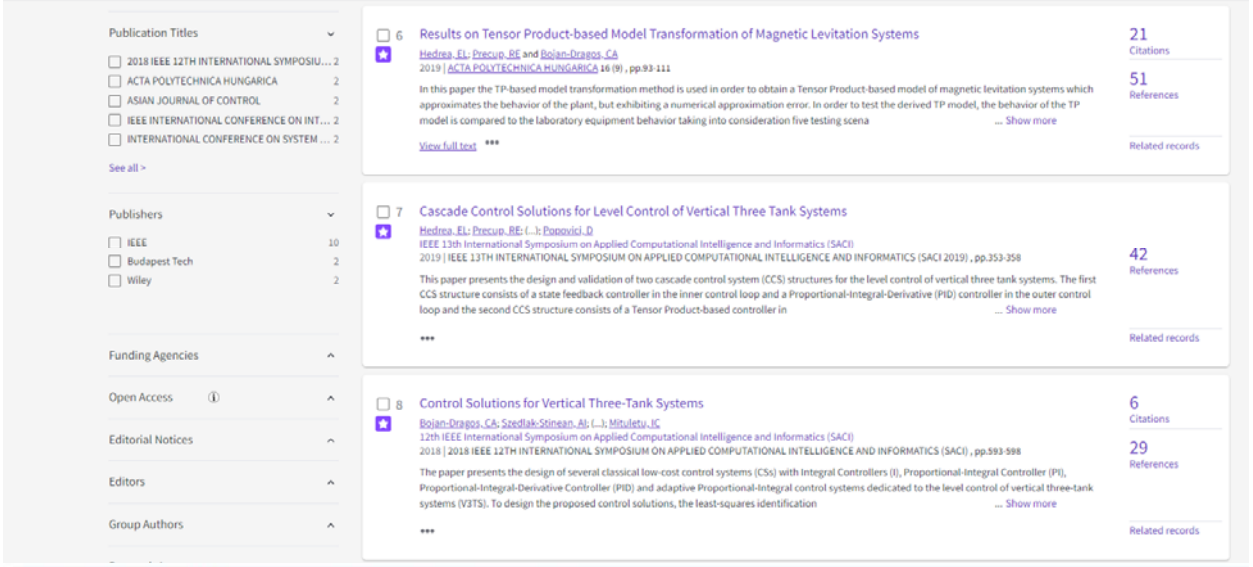

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- IEEE INTERNATIONAL CONFERENCE ON INT... 2
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6 Results on Tensor Product-based Model Transformation of Magnetic Levitation Systems
Hedrea, EL; Precup, RE and Bojan-Dragos, CA
2019 | ACTA POLYTECHNICA HUNGARICA 16 (9) , pp.93-111
In this paper the TP-based model transformation method is used in order to obtain a Tensor Product-based model of magnetic levitation systems which approximates the behavior of the plant, but exhibiting a numerical approximation error. In order to test the derived TP model, the behavior of the TP model is compared to the laboratory equipment behavior taking into consideration five testing scena ... Show more
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7 Cascade Control Solutions for Level Control of Vertical Three Tank Systems
Hedrea, EL; Precup, RE; (...); Popovici, D
IEEE 13th International Symposium on Applied Computational Intelligence and Informatics (SACI)
2019 | IEEE 13TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI 2019) , pp.353-358
This paper presents the design and validation of two cascade control system (CCS) structures for the level control of vertical three tank systems. The first CCS structure consists of a state feedback controller in the inner control loop and a Proportional-Integral-Derivative (PID) controller in the outer control loop and the second CCS structure consists of a Tensor Product-based controller in ... Show more
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8 Control Solutions for Vertical Three-Tank Systems
Bojan-Dragos, CA; Szedlak-Stinean, AI; (...); Mituletu, 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.593-598
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
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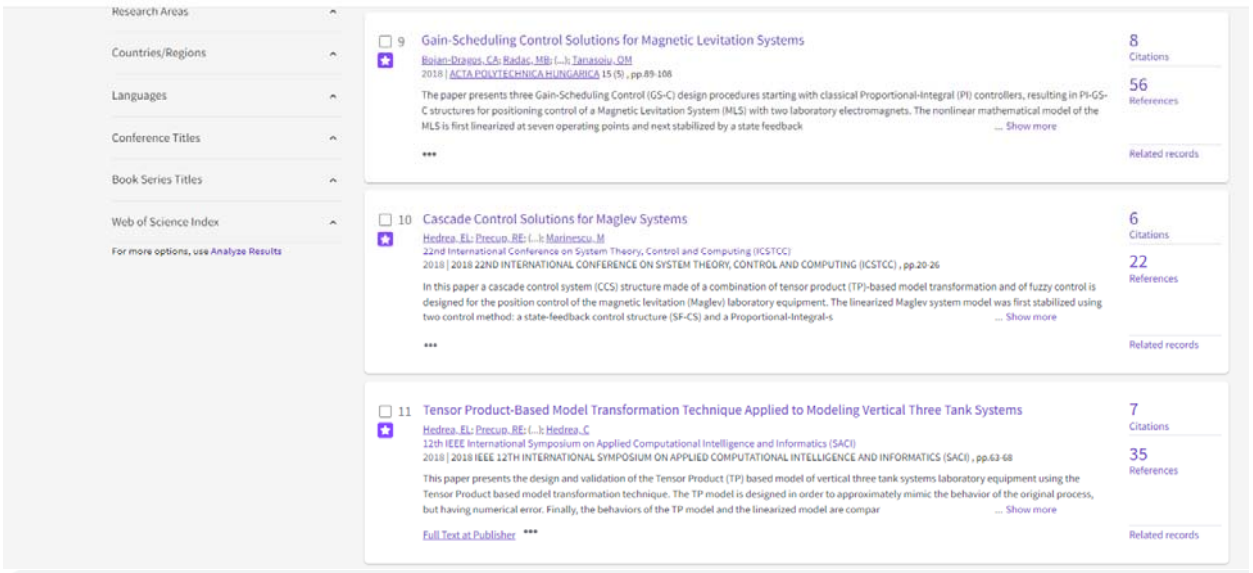

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9 Gain-Scheduling Control Solutions for Magnetic Levitation Systems
Bojan-Dragos, CA; Radac, MB; (...); Tanasoiu, OM
2018 | ACTA POLYTECHNICA HUNGARICA 15 (5) , pp.89-108
The paper presents three Gain-Scheduling Control (GS-C) design procedures starting with classical Proportional-Integral (PI) controllers, resulting in PI-GS-C structures for positioning control of a Magnetic Levitation System (MLS) with two laboratory electromagnets. The nonlinear mathematical model of the MLS is first linearized at seven operating points and next stabilized by a state feedback ... Show more
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8 Citations
56 References
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10 Cascade Control Solutions for Maglev Systems
Hedrea, EL; Precup, RE; (...); Marinescu, M
22nd International Conference on System Theory, Control and Computing (ICSTCC)
2018 | 2018 22ND INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC) , pp.20-26
In this paper a cascade control system (CCS) structure made of a combination of tensor product (TP)-based model transformation and of fuzzy control is designed for the position control of the magnetic levitation (Maglev) laboratory equipment. The linearized Maglev system model was first stabilized using two control method: a state-feedback control structure (SF-CS) and a Proportional-Integral-s ... Show more
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11 Tensor Product-Based Model Transformation Technique Applied to Modeling Vertical Three Tank Systems
Hedrea, EL; Precup, RE; (...); Hedrea, C
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.63-68
This paper presents the design and validation of the Tensor Product (TP) based model of vertical three tank systems laboratory equipment using the Tensor Product based model transformation technique. The TP model is designed in order to approximately mimic the behavior of the original process, but having numerical error. Finally, the behaviors of the TP model and the linearized model are compar ... Show more
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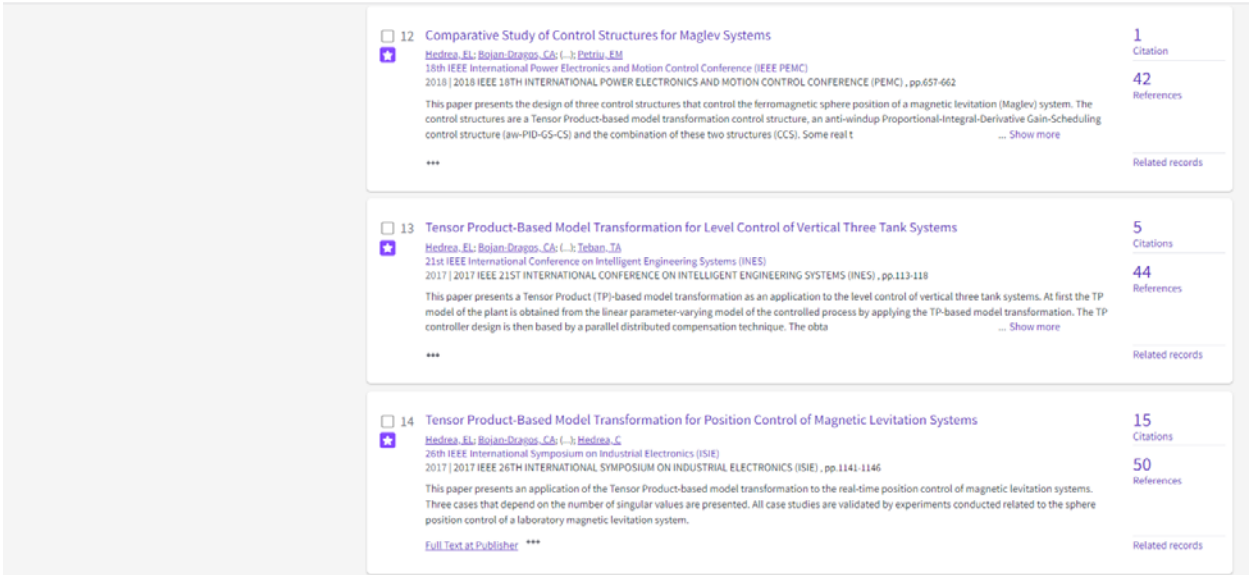

12 Comparative Study of Control Structures for Maglev Systems
Hedrea, EL; Bojan-Dragos, CA; (...); Petriu, EM
18th IEEE International Power Electronics and Motion Control Conference (IEEE PEMC)
2018 | 2018 IEEE 18TH INTERNATIONAL POWER ELECTRONICS AND MOTION CONTROL CONFERENCE (PEMC) , pp.657-662
This paper presents the design of three control structures that control the ferromagnetic sphere position of a magnetic levitation (Maglev) system. The control structures are a Tensor Product-based model transformation control structure, an anti-windup Proportional-Integral-Derivative Gain-Scheduling control structure (aw-PID-GS-CS) and the combination of these two structures (CCS). Some real t ... Show more
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13 Tensor Product-Based Model Transformation for Level Control of Vertical Three Tank Systems
Hedrea, EL; Bojan-Dragos, 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
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14 Tensor Product-Based Model Transformation for Position Control of Magnetic Levitation Systems
Hedrea, EL; Bojan-Dragos, CA; (...); Hedrea, C
26th IEEE International Symposium on Industrial Electronics (ISIE)
2017 | 2017 IEEE 26TH INTERNATIONAL SYMPOSIUM ON INDUSTRIAL ELECTRONICS (ISIE) , pp.1141-1146
This paper presents an application of the Tensor Product-based model transformation to the real-time position control of magnetic levitation systems. Three cases that depend on the number of singular values are presented. All case studies are validated by experiments conducted related to the sphere position control of a laboratory magnetic levitation system.
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