

Accessibility and system reduction of nonlinear time-delay control systems

Bartosiewicz, Zbigniew; **Kaldmäe, Arvo**; Kawano, Yu; **Kotta, Ülle**; Pawluszewicz, Ewa; **Simha, Ashutosh**; Wyrwas, Małgorzata
IEEE Transactions on Automatic Control 2021 / p. 3781–3788 <https://doi.org/10.1109/TAC.2020.3028566> [Journal metrics at Scopus](#)
[Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Advanced design of nonlinear discrete-time and delayed systems = Diskreetsete ja hilistumistega mittelineaarsete juhtimissüsteemide süntees

Kaldmäe, Arvo 2016 <https://digi.lib.ttu.ee/75215> https://www.ester.ee/record=b4569894*est

Algebraic necessary and sufficient condition for difference flatness

Kaldmäe, Arvo International Journal of Control 2021 / 8 p <https://doi.org/10.1080/00207179.2021.1908598> [Journal metrics at Scopus](#)
[Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

An algorithm to transform discrete-time state equations into the extended observer form

Kaldmäe, Arvo; **Kotta, Ülle** Automatica 2024 / art. 111598 <https://doi.org/10.1016/j.automatica.2024.111598> [Journal metrics at Scopus](#)
[Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A brief tutorial overview of disturbance observers for nonlinear systems : application to flatness-based control

Kaldmäe, Arvo; **Kotta, Ülle** Proceedings of the Estonian Academy of Sciences 2020 / p. 57-73 : ill
<https://doi.org/10.3176/proc.2020.1.07> http://www.kirj.ee/33035/?tpl=1061&c_tpl=1064 [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Comments on 'A new kind of nonlinear disturbance observer for nonlinear systems with applications to cruise control of air-breathing hypersonic vehicles'

Kaldmäe, Arvo; **Kotta, Ülle** International journal of control 2020 / p. 1725 <https://doi.org/10.1080/00207179.2018.1529436> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Comments on “When retarded nonlinear time-delay systems admit an input–output representation of neutral type” [Automatica 49 (2013) 561–567]

Kaldmäe, Arvo Automatica 2023 / art. 110797, 2 p <https://doi.org/10.1016/j.automatica.2022.110797> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Computation of nonlinear eigenvalues based on the Ore determinant : preliminary results

Halás, Miroslav; **Kaldmäe, Arvo**; **Kotta, Ülle**; Slacka, Juraj Proceedings of the Estonian Academy of Sciences 2024 / p. 366 - 378
<https://doi.org/10.3176/proc.2024.4.06> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Construction of flat outputs of nonlinear discrete-time systems in a geometric and an algebraic framework

Kolar, Bernd; **Kaldmäe, Arvo**; Schöberl, Markus; **Kotta, Ülle**; Schlacher, Kurt IFAC-PapersOnLine 2016 / p. 796-801
<https://doi.org/10.1016/j.ifacol.2016.10.263> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Disturbance decoupling by measurement feedback

Kaldmäe, Arvo; **Kotta, Ülle** 19th IFAC World Congress on International Federation of Automatic Control, IFAC 2014 2014 / p. 7735-7740 : ill <https://doi.org/10.3182/20140824-6-za-1003.00216> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Disturbance decoupling by measurement feedback : sensor location

Kaldmäe, Arvo; **Kotta, Ülle**; Shumsky, Alexey; Zhirabok, Alexey Proceedings of the Estonian Academy of Sciences 2016 / p. 317-329 : ill <https://doi.org/10.3176/proc.2016.4.05> https://artiklid.elnet.ee/record=b2808632*est [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Disturbance decoupling for nonlinear systems by measurement feedback: Sensor location

Kaldmäe, Arvo; **Kotta, Ülle**; Shumsky, Alexey; Zhirabok, Alexey 19th IFAC World Congress on International Federation of Automatic Control, IFAC 2014 2014 / p. 7729-7734 : ill <https://doi.org/10.3182/20140824-6-za-1003.00013> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Disturbance decoupling in nonlinear hybrid systems

Kaldmäe, Arvo; **Kotta, Ülle**; Shumsky, Alexey; Zhirabok, Alexey Nonlinear analysis : hybrid systems 2018 / p. 42-53
<https://doi.org/10.1016/j.nahs.2017.11.001> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Disturbance decoupling in nonlinear hybrid systems [Electronic resource]

Kaldmäe, Arvo; **Kotta, Ülle**; Shumsky, Alexey; Zhirabok, Alexey 12th IEEE International Conference on Control and Automation : ICCA 2016 : Kathmandu, Nepal, 1-3 June 2016 2016 / p. 86-91 : ill. [USB] <https://doi.org/10.1109/ICCA.2016.7505257>

Disturbance decoupling of multi-input multi-output discrete-time nonlinear systems by static measurement feedback

Kaldmäe, Arvo; **Kotta, Ülle** Proceedings of the Estonian Academy of Sciences 2012 / p. 77-88
https://artiklid.elnet.ee/record=b2497319*est

Disturbance decoupling of time delay systems

Kaldmäe, Arvo; Moog, Claude Asian journal of control 2016 / p. 1130-1134 <https://doi.org/10.1002/asjc.1169> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Disturbance decoupling problem in finite automata : sensor location problem

Kaldmäe, Arvo; **Kotta, Ülle**; Shumsky, Alexey; Zhirabok, Alexey 2016 IEEE Conference on Control Applications (CCA) : part of 2016 IEEE Multi-Conference on Systems and Control, September 19-22, 2016, Buenos Aires, Argentina 2016 / p. 481-486 : ill <https://doi.org/10.1109/CCA.2016.7587876>

Event-based control for differentially flat systems: application to autonomous underwater vehicle

Kaldmäe, Arvo; **Kotta, Ülle**; Meurer, Christian; **Simha, Ashutosh** IFAC-PapersOnLine 2019 / p. 180-185 <https://doi.org/10.1016/j.ifacol.2019.11.775> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

An Extended flatness-based controller for permanent magnet synchronous machines incorporating an event-based mechanism

Belikov, Juri; **Kaldmäe, Arvo**; Levron, Yoash 2019 27th Mediterranean Conference on Control and Automation (MED) 2019 / p. 416-421 : ill <https://doi.org/10.1109/MED.2019.8798551>

Extended observer form with vector fields

Mullari, Tanel; **Kotta, Ülle**; **Kaldmäe, Arvo**; **Kaparin, Vadim**; Simha, Ashutosh International journal of control 2024 / p. 2399 - 2412 <https://doi.org/10.1080/00207179.2023.2274060> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Faulty plant reconfiguration based on disturbance decoupling methods

Kaldmäe, Arvo; **Kotta, Ülle**; Jiang, Bin; Shumsky, Alexey Ye.; Zhirabok, Alexey N. Asian journal of control 2016 / p. 858-867 : ill <https://doi.org/10.1002/asjc.1185> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Faulty plant reconfiguration by measurement feedback: Sensor location

Kaldmäe, Arvo; **Kotta, Ülle**; Shumsky, Alexey; Zhirabok, Alexey IFAC-PapersOnLine 2015 / p. 1283-1288 : ill <https://doi.org/10.1016/j.ifacol.2015.09.702> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Feedback linearization of possibly non-smooth systems

Kaldmäe, Arvo; **Kotta, Ülle**; Shumsky, Alexey; Zhirabok, Alexey Proceedings of the Estonian Academy of Sciences 2017 / p. 109-123 <https://doi.org/10.3176/proc.2017.2.01> http://www.ester.ee/record=b2355998*est https://artiklid.elnet.ee/record=b2820923*est [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A finite feedback linearization algorithm for nonlinear control systems

Kaldmäe, Arvo Proceedings of the 8th Annual Conference of the Estonian National Doctoral School in Information and Communication Technologies : December 5-6, 2014, Rakvere 2014 / p. 53-56 https://www.ester.ee/record=b4440332*est

Flatness based control of a HVAC system

Kaldmäe, Arvo; **Kotta, Ülle** Information technology and control 2017 / p. 499-507 : ill <https://doi.org/10.5755/j01.itc.46.4.17697> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Functions' algebra in nonlinear control : computational aspects and software

Belikov, Juri; **Kaldmäe, Arvo**; **Kaparin, Vadim**; **Kotta, Ülle**; Shumsky, Alexey Ye.; **Tõnso, Maris**; Zhirabok, Alexey Proceedings of the Estonian Academy of Sciences 2017 / p. 89-107 <https://doi.org/10.3176/proc.2017.1.06> http://www.ester.ee/record=b2355998*est [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Global linearization approach to nonlinear control systems : a brief tutorial overview

Belikov, Juri; **Kaldmäe, Arvo**; **Kotta, Ülle** Proceedings of the Estonian Academy of Sciences 2017 / p. 243-263 <https://doi.org/10.3176/proc.2017.3.01> http://www.ester.ee/record=b2355998*est https://artiklid.elnet.ee/record=b2824300*est [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Input-output decoupling of discrete-time nonlinear systems by dynamic measurement feedback

Kaldmäe, Arvo; **Kotta, Ülle** European journal of control 2017 / p. 31-38 : ill <https://doi.org/10.1016/j.ejcon.2016.12.004> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Input-output linearization of discrete-time systems by dynamic output feedback

Kaldmäe, Arvo; **Kotta, Ülle** European journal of control 2014 / p. 73-78 <https://doi.org/10.1016/j.ejcon.2013.12.004> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Integrability for nonlinear time-delay systems

Kaldmäe, Arvo; Califano, Claudia; Moog, Claude IEEE transactions on automatic control 2016 / p. 1912-1917 <https://doi.org/10.1109/TAC.2015.2482003> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Intrinsic conditions for extended observer forms for nonlinear systems

Simha, Ashutosh; Respondek, Witold; **Kaldmäe, Arvo**; **Kaparin, Vadim**; **Kotta, Ülle** 2018 IEEE Conference on Decision and Control (CDC), 17-19 Dec. 2018, 17-19 Dec. 2018 : proceedings 2018 / p. 1373-1378 <https://doi.org/10.1109/CDC.2018.8619122> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

IT-teadlane Arvo Kaldmäe: «Teadmatust saab teada!»

Kaldmäe, Arvo postimees.ee 2023 [IT-teadlane Arvo Kaldmäe: «Teadmatust saab teada!»](#)

Linearization of discrete-time nonlinear control systems

Kaldmäe, Arvo Info- ja kommunikatsioonitehnoloogia doktorikooli IKTDK seitsmenda aastakonverentsi artiklite kogumik : 15.-16. novembril 2013, Haapsalu 2013 / p. 29-32

Measurement feedback disturbance decoupling in discrete-event systems

Kaldmäe, Arvo; **Kotta, Ülle**; Shumsky, Alexey; Zhirabok, Alexey International journal of robust and nonlinear control 2015 / p. 3330-3348 <https://doi.org/10.1002/rnc.3265> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Measurement feedback disturbance decoupling in discrete-time nonlinear systems

Kaldmäe, Arvo; **Kotta, Ülle**; Shumsky, Alexey Ye.; Zhirabok, Alexey N. Automatica 2013 / p. 2887-2891 : ill <https://doi.org/10.1016/j.automatica.2013.06.013> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Minimal realizations of nonlinear time-delay systems

Kaldmäe, Arvo; Zbigniew, Bartosiewicz; **Kotta, Ülle**; Wyrwas, Malgorzata IEEE transactions on automatic control 2023 / p. 6766 - 6772 <https://doi.org/10.1109/TAC.2023.3240124> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A note on observability of nonlinear discrete-time systems

Kaldmäe, Arvo; **Kotta, Ülle** 2023 62nd IEEE Conference on Decision and Control (CDC), Singapore, 13-15 December 2023 2023 / p. 7483-7488 <https://doi.org/10.1109/CDC49753.2023.10383709> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Observer-based residual generation for nonlinear discrete-time systems

Kaldmäe, Arvo; **Kotta, Ülle** Proceedings of the Estonian Academy of Sciences 2018 / p. 325-336 <https://doi.org/10.3176/proc.2018.4.01> http://www.kirj.ee/public/proceedings_pdf/2018/issue_4/proc-2018-4-325-336.pdf [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

On flatness of discrete-time nonlinear systems

Kaldmäe, Arvo; **Kotta, Ülle** 9th IFAC Symposium on Nonlinear Control Systems 2013 : Toulouse, France, 4 - 6 September 2013 2013 / p. 588 - 593 <https://doi.org/10.3182/20130904-3-FR-2041.00017> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

On the properties of forward and backward shifts of vector fields

Kaldmäe, Arvo; **Kaparin, Vadim**; **Kotta, Ülle**; **Mullari, Tanel**; Pawluszewicz, Ewa Proceedings of the Estonian Academy of Sciences 2022 / p. 314-325 <https://doi.org/10.3176/proc.2022.4.02> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Realization of nonlinear input-output equations in controller canonical form

Kaldmäe, Arvo; **Kotta, Ülle** Kybernetika 2018 / p. 736-747 <https://doi.org/10.14736/kyb-2018-4-0736> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Realization of nonlinear time-delay input-output equations

Kaldmäe, Arvo; **Kotta, Ülle**; **Tõnso, Maris** IEEE Control Systems Letters 2018 / p. 369-374 <https://doi.org/10.1109/LCSYS.2018.2838456> [Journal metrics at Scopus](#) [Article at Scopus](#)

Realization of time-delay systems

Kaldmäe, Arvo; **Kotta, Ülle** Automatica 2018 / p. 317-320 <https://doi.org/10.1016/j.automatica.2018.01.001> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Realizations in feedforward forms of nonlinear input-output equations with time-delays

Kaldmäe, Arvo; Kawano, Yu; **Kotta, Ülle** International journal of robust and nonlinear control 2020 / p. 7560-7573 <https://doi.org/10.1002/rnc.5194> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Relations between modules associated to input-output nonlinear equations with delays and their realizations

Bartosiewicz, Zbigniew; **Kaldmäe, Arvo**; **Kotta, Ülle**; Wyrwas, Malgorzata 62nd IEEE Conference on Decision and Control, CDC 2023, Singapore, 13-15 December 2023 2023 / p. 644-650 <https://doi.org/10.1109/CDC49753.2023.10383927> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

TalTechi IT-teadlaste uus projekt tahab tõsta juhtimismetodite efektiivsust

Kaldmäe, Arvo ituudised.ee 2023 [TalTechi IT-teadlaste uus projekt tahab tõsta juhtimismetodite efektiivsust](#)

Towards integrability for nonlinear time-delay systems

Kaldmäe, Arvo; Moog, Claude H.; Califano, Claudia IFAC-Papers OnLine 2015 / p. 900-905 <https://doi.org/10.1016/j.ifacol.2015.09.305>
[Conference proceedings at Scopus](#) [Article at Scopus](#)