Andrii Mironchenko — Curriculum Vitae

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ORCID	0000-0003-0554-8529
Researcher-ID	AAD-7907-2021
Date & place of birth	05.07.1986, Odesa, Ukraine
Residence permit	Germany (permanent)

EDUCATION

- University of Passau, Passau, Germany, 2019–2023.
  - Degree: Dr. habil. in mathematics (awarded on 25.01.2023).
  - Habilitation thesis: Input-to-state stability of distributed parameter systems.
  - Reviewers: Jean-Michel Coron, Marius Tucsnak, Fabian Wirth, Hans Zwart.
- University of Bremen, Bremen, Germany, 2009–2012.
  - Degree: Ph.D. in mathematics (awarded on 25.07.2012).
  - PhD thesis: "Input-to-state stability of infinite-dimensional control systems".
  - Supervisor: Sergey Dashkovskiy
  - Reviewers: Sergey Dashkovskiy, Fabian Wirth
- I.I. Mechnikov Odesa National University, Odesa, Ukraine, 2006–2008.
  - Degree: M.Sc. (applied mathematics), Degree with Honours (awarded on 30.06.2008).
  - Thesis: "Mathematical modeling of an agrocoenosis".
- I.I. Mechnikov Odesa National University, Odesa, Ukraine, 2002–2006.
  - Degree: B.Sc. (applied mathematics), Degree with Honours (awarded on 07.07.2006).
  - Thesis: "Numeric solution of the spatial Dirichlet problem for multiply-connected regions".

ACADEMIC CAREER

23.10.23 – today	*Privatdozent* ("Universitätsassistent", salary grade B1) at the University of Klagenfurt, Austria.
10.2014 – 10.2023	*Postdoc* at the University of Passau, Germany.
12.2013 – 06.2014	*Fellow of Japan Society for the Promotion of Science (JSPS)* at Kyushu Institute of Technology, Japan.
08.2012 – 09.2014	*Postdoc* at the University of Würzburg, Chair of Dynamics and Control.

05.2009 – 07.2012 *Researcher* at the Department of Mathematics and Computer Science, University of Bremen.

Short-term research visits

08.2016 Research visit at Cymer Center for Control Systems and Dynamics, *University of California at San Diego (UCSD)*. Host researcher: Miroslav Krstic.

09.2013 – 10.2013 Research visit at *University of Illinois at Urbana-Champaign (UIUC)*. Host researcher: Daniel Liberzon.

HONORS

2023 2023 IEEE CSS George S. Axelby Outstanding Paper Award for the paper [27] (to be awarded at CDC 2023), where the first tight small-gain theorem for infinite networks was proved.

2013 Postdoctoral Fellowship of the Japan Society for the Promotion of Science (JSPS) (12.2013 – 06.2014).

GRANTS

Below DFG stands for German Research Foundation (ger. Deutsche Forschungsgemeinschaft).

10/23 (Submitted, in review at DFG) € 536.250 Heisenberg project (MI 1886/3-1).

07/23 (Submitted, in review at DFG) € 96.400 the project "Robust stability and control for systems with outputs" (as a Co-PI).

04/22 – 03/24 € 196.000 from the DFG for the project "Lyapunov theory meets boundary control systems" (grant MI 1886/2-2).

04/19 – 03/21 € 208.000 from the DFG for the project "Robust stabilization of interconnected infinite-dimensional systems with boundary couplings" (grant MI 1886/2-1).

10/15 – 10/17 (€ 450.000 for all applicants) I coordinated and coauthored the preparation of the proposal for a DFG Research Grant for the project "Input-to-state stability and stabilization of distributed parameter systems". Principal investigators: Sergey Dashkovskiy, Birgit Jacob, Fabian Wirth.

2016 € 16.300 from the DFG and Uni Passau for the organisation of the Workshop "Stability and Control of Infinite-Dimensional Systems" (grant MI 1886/1-1).

12/13 – 06/14 € 17.500 from the Japan Society for the Promotion of Science (JSPS), as a JSPS Postdoctoral Fellowship for the project "Lyapunov methods for dissipativity of infinite-dimensional systems".

01/12 – 12/12 € 12.300 Research Fellowship (third-party-funded) of the University of Bremen

TEACHING EXPERIENCE

University of Passau, Germany:

2021/2022 (hybrid course) Partial Differential Equations (5960V, Lecturer (in zoom), 3+2 hours per week).

2021	(online course) Semigroup Theory and Evolution Equations (5961V, Lecturer, 3+2 hours per week).
2020/2021	Dynamical Systems (Seminar co-organiser).
2018/2019	Analysis II (5372UE, Tutor, 4 hours per week).
2018	Ordinary Differential Equations (5750V, Lecturer, 4+2 hours per week).
2017/2018	Mathematics in Technical Systems III (5362V, Lecturer, 3+2 hours per week).
2015/2016	Semigroup Theory (5961V, Lecturer, 3+2 hours per week). *New course in the curriculum of Uni Passau.*
2015	Port-Hamiltonian Infinite-Dimensional Systems (Seminar organiser).
2014/2015	Mathematics in Technical Systems III (5362UE, Tutor, 4 hours per week).
2014/2015	Ordinary Differential Equations (5750UE, Tutor, 4 hours per week).

Mechnikov Odesa National University, Ukraine:

Sep-Oct 2015	Introduction to input-to-state stability theory (Invited Lecturer, *newly developed course*)

University of Würzburg, Germany:

2012/2013	Control theory (Tutor, 2 hours per week)

University of Bremen, Germany:

2011	Mathematics 2 for engineers (04-26-2-M2-Ü, Tutor).
2010/2011	Mathematics 1 for engineers (04-26-1-M1-Ü, Tutor).
2010	Stability of interconnected dynamical systems (03-224, Tutor, 2 hours per week).

PHD & MASTER STUDENTS

PhD students

since 11.2023	Ms. Qiaoling Chen. Topic: Robust observation for nonlinear infinite-dimensional systems.
2023 – now	Mr. Patrick Bachmann. Topic: Robust stability and control for systems with outputs.
2022 – now	Ms. Rahma Heni. Topic: Lyapunov methods for input-to-state stability of time-varying systems in abstract spaces.

Master students

2022	Mr. Alexander Kilian. Port-Hamiltonian Systems with a Moving Interface, Master thesis, University of Passau. Now: PhD student at the University of Passau
2021	Mr. Pawan Kore. Optimal climate control for the simulated data center in time-varying cost scenario, Master thesis, University of Passau. Now: Automation Test Engineer at Nuki Home Solutions GmbH, Graz, Austria.
2010	Ms. Leontina Levenzon. Mathematical modeling and analysis of the dynamical processes in supply chains, (Germ. "Mathematische Modellierung und Untersuchung dynamischer Prozesse in Lieferketten"). Diploma thesis, University of Bremen.

Examiner/Member of PhD committees

2023 — Mr. Shantanu Singh. A class of incrementally scattering passive infinite dimensional systems on Hilbert spaces. PhD thesis, Tel Aviv University.

GUESTS (POST-COVID TIMES)

09.2023 – 10.2023 — Ms. Rahma Heni (University of Sfax, Tunisia)

06.2023 — Dr. Rami Katz (Tel Aviv University, Israel)

04.2023 — Prof. Antoine Chaillet (University Paris-Saclay, France)

04.2023 — Dr. Lucas Brivadis (CNRS, Laboratory of Signals and Systems (L2S), University Paris-Saclay, France)

10.2022 – 11.2022 — Ms. Rahma Heni (University of Sfax, Tunisia)

ORGANISATION OF SCIENTIFIC EVENTS

2016 – now — Co-founder and co-organiser of the **Workshop series "Stability and Control of Infinite-Dimensional Systems" (SCINDIS)**. All 4 workshops are supported by DFG:

- SCINDIS 2026 — Planned
- SCINDIS 2023, Wuppertal, Germany — 65 participants
- SCINDIS 2020, online Workshop — $\geq$ 160 registered participants from 28 countries.
- SCINDIS 2018, Würzburg, Germany, — 66 participants from 21 countries.
- SCINDIS 2016, Passau, Germany, — 47 participants from 12 countries.

2021 – now — Organiser of the **Online Seminar on Input-to-State Stability and its Applications**.

2021 – now — Organiser/Founder of the YouTube Channel on Input-to-State Stability ($\geq$ 370 subscribers as of 29.09.2023).

2021 — Co-organiser of the Minisymposium "Dynamics, stability and control in infinite dimensions" at *Joint Annual Conference of the German Mathematical Society (DMV) and the Austrian Mathematical Society (ÖMG)*, Passau, September 2021 (with J. Glück).

2020 — Co-organiser (with Ch. Prieur) of the pre-Conference Virtual Workshop on "Input-to-state stability and control of infinite-dimensional systems" at IFAC World Congress 2020, Berlin, Germany, 11 July 2020.

2018 – now — Co-organiser of invited and tutorial sessions at:

- *European Control Conference (ECC21)*, Rotterdam, 2021 (with Ch. Prieur).
- *90th Annual Meeting of the International Association of Applied Mathematics and Mechanics*, Vienna, 2019 (with F. Schwenninger).
- *23rd International Symposium on Mathematical Theory of Systems and Networks*, Hong-Kong, 2018 (with B. Jacob).

SCIENTIFIC COMMUNITY SERVICE

Membership

- Senior Member of IEEE (since 2022).

Editorship

- *Associate Editor* in Systems & Control Letters, 2023–.
- *Associate Editor* in Frontiers in Control Engineering, 2022–.
- *Guest Editor* for the Volume 12, Issue 3 in Mathematical Control & Related Fields (MCRF), 2022.
- *Guest Editor* for the Topical Collection on Input-to-state stability for infinite-dimensional systems in the Mathematics of Control, Signals, and Systems (MCSS), 2021.

Programme committees at international conferences

- *Associate Editor (Contributed Papers)* at the 26th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2024), Cambridge, UK, 2024.
- *Programme committee member* at the 25th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2022), Bayreuth, Germany, 2022.
- *Associate Editor* of Section 2.3. "Design Methods - Non-Linear Control Systems" at IFAC World Congress 2020, Berlin, Germany, 2020.

Session chair & co-chair at international conferences

- CDC 2023: Chair of a session "Modeling"
- IFAC WC 2020: Co-chair of a (virtual) session "On Nonlinear Infinite Dimensional Systems"
- CDC 2019: Co-chair of a session "Large-scale systems"
- NOLCOS 2019: Co-chair of a session "Networked Systems I"
- GAMM 2019: Chair and co-organiser of a session "Input-to-State Stability of Distributed Parameter Systems".
- MTNS 2018: Chair of a session "Nonlinear Systems and Control II", chair and co-organiser of a session "Input-to-State Stability of Distributed Parameter Systems"

Committee work

- *Member of the appointment committee* for the professorships "Mathematical Optimisation", "Mathematical Data Science", "Intelligent Systems", and "Sensor-Based Systems" at the Faculty of Computer Science and Mathematics, the University of Passau, Germany, (2018–).
- *Permanent member of the Tenure Track Committee* at the Faculty of Computer Science and Mathematics of the University of Passau (2021–)
- *Member of the Team "University of Passau and the war in Europe".* The objective of the team was a development of the strategy of the University of Passau with respect to cooperation with researchers from Ukraine and Russia (2022).

Reviewer

Journals: IEEE Transactions on Automatic Control • SIAM Journal on Control and Optimization Mathematics of Control, Signals, and Systems • Systems & Control Letters • Automatica • IEEE Control Systems Letters • Journal of Differential Equations • Journal of Computational Dynamics • Nonlinear Analysis • International Journal of Control • IET Control Theory & Applications • ESAIM: Control, Optimisation and Calculus of Variations • International Journal of Systems Science • Evolution Equations and Control Theory • Theoretical Ecology.

Conferences: International Symposium on Mathematical Theory of Networks and Systems (MTNS) • IFAC Symposium on Nonlinear Control Systems • Conference on Decision and Control (CDC)

• World Congress of the International Federation of Automatic Control (IFAC WC) • American Control Conference (ACC) • European Control Conference (ECC) • Chinese Control and Decision Conference (CCDC).

Evaluation of research grants: German Research Foundation (2x).

LANGUAGES

- Ukrainian - native
- English, German, Russian - very good
- Scientific programming: Matlab/Octave/Scilab

COOPERATION PARTNERS (SELECTION)

- S. Dashkovskiy (U Würzburg,)
- J. Glück (U Wuppertal,)
- H. Ito (Kyushu Inst. of Tech.,)
- B. Jacob (U Wuppertal,)
- I. Karafyllis (TU Athens,)
- H. R. Karimi (Politecnico di Milano,)
- Ch. Kawan (LMU München,)
- J. Kozlowski (Jagiellonian U,)
- M. Krstic (UC San Diego,)
- D. Liberzon (UI Urbana-Champaign,)
- B. Maschke (U Claude Bernard Lyon-1,)
- N. Noroozi (SIGNON (subsidiary of DB),)
- J. Partington (U Leeds,)
- Ch. Prieur (CNRS, Gipsa-lab,)
- J. Schmid (Fraunhofer ITWM,)
- F. Schwenninger (TU Twente,)
- A. Swikir (TU München,)
- F. Wirth (U Passau,)
- K. Wulff (TU Ilmenau,)
- G. Yang (Rutgers University,)
- M. Zamani (U Colorado Boulder,)

PLACEMENTS IN APPOINTMENT PROCEDURES

- 2nd place in the appointment process for (tenure-track) Assistant Professorship in Dynamic Systems, Signals and Control at Biometris, Wageningen University & Research, 2022.

REFERENCES

- Miroslav Krstic, University of California, San Diego, USA, krstic@ucsd.edu
- Christophe Prieur, CNRS, Gipsa-Lab, Grenoble, France, christophe.prieur@gipsa-lab.fr
- Fabian Wirth, University of Passau, Germany, fabian.wirth@uni-passau.de

RESEARCH INTERESTS

Figure 1 shows a mindmap of my research interests. Below you can find my papers on particular topics.

- Distributed parameter systems
  - Nonlinear theory (evolution equations, abstract systems): [33,32,20,19,21,13,14,10,8,4,3]
  - Linear systems: [36,19,34,24,20]
  - Stability analysis & control of PDEs: [22,19,20,16,8,4]
  - Port-Hamiltonian systems: [35,31]
- Stability analysis of large-scale finite networks: [21,12,8,5,4,3]

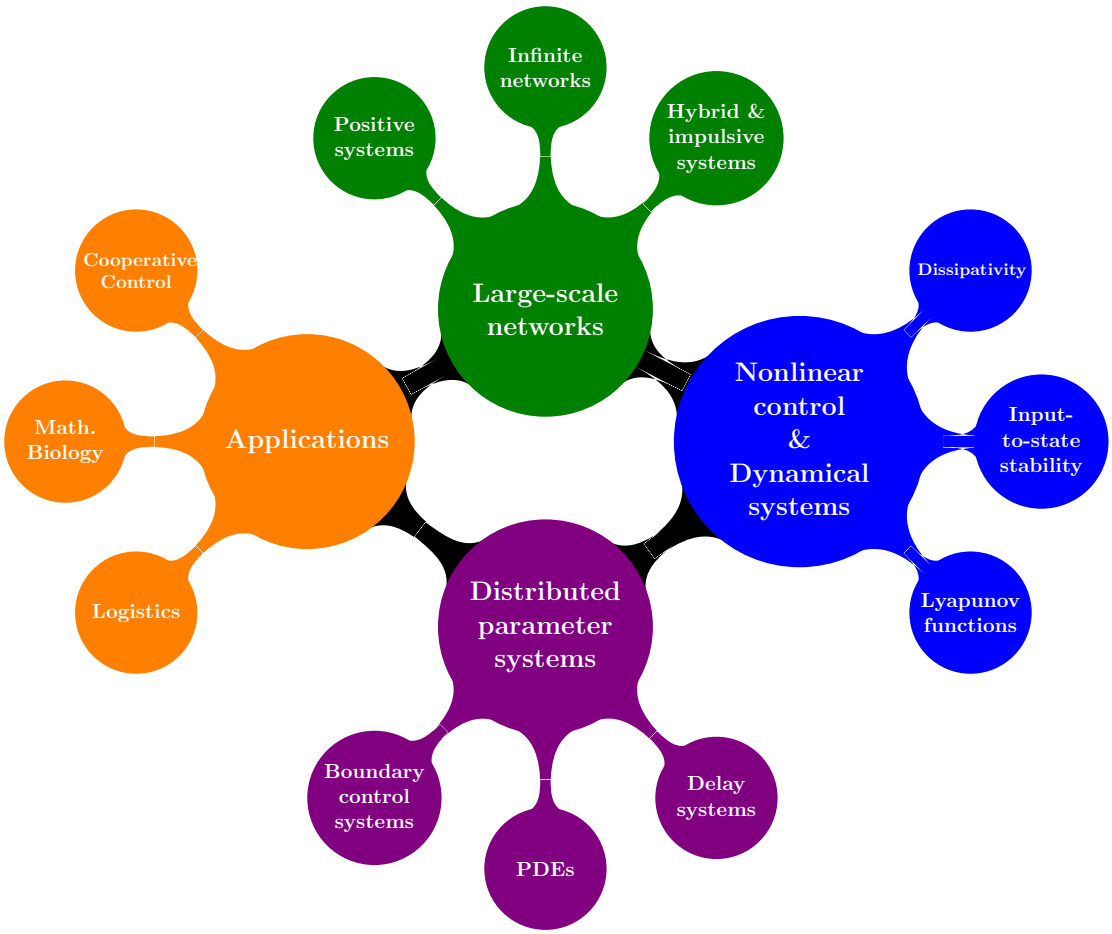


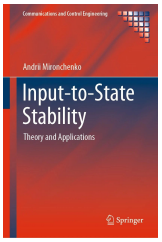
Figure 1: Research Interests

- Stability & control of infinite networks: [30,28,23,25,29,27]
- Hybrid, impulsive, discrete-time & switched systems: [28,12,5,3,7]
- Non-coercive Lyapunov theory: [19,17,18,11]
- Applications: cooperative control [29], mathematical biology [6], logistics [2]
- Monotone (positive) systems: [34,24,16]

PUBLICATIONS

You can also consult my profiles at **Google Scholar**, **MathSciNet**, **Scopus**, **ResearchGate**.

My top five journal publications are marked by ***(*)****.*



Monograph

[1] A. Mironchenko. Input-to-State Stability, Springer, 2023.

Journal papers (published & submitted)

[36] A. Mironchenko, F. Schwenninger. Coercive quadratic converse ISS Lyapunov theorems for linear analytic systems. *Submitted to Mathematics of Control, Signals, and Systems*, 2023. Preprint

[35] A. Kilian, B. Maschke, A. Mironchenko, F. Wirth. Infinite-dimensional port-Hamiltonian systems with a stationary interface. *ArXiV preprint*, 2023. Preprint

[34] J. Glück, A. Mironchenko. Stability criteria for positive C_0-semigroups on ordered Banach spaces. *ArXiV preprint*, 2022. Preprint

[33] A. Mironchenko. Well-posedness and properties of the flow for semilinear evolution equations. *Accepted to Mathematics of Control, Signals, and Systems (MCSS)*, 2023. Preprint

[32] A. Mironchenko. Lyapunov criteria for robust forward completeness of distributed parameter systems. *Systems & Control Letters*, 180:105618, 2023. Preprint

[31] A. Kilian, B. Maschke, A. Mironchenko, F. Wirth. A case study of port-Hamiltonian systems with a moving interface. *IEEE Control Systems Letters*, 7:1572–1577, 2023. Preprint

[30] (*) Ch. Kawan, A. Mironchenko, M. Zamani. A Lyapunov-based ISS small-gain theorem for infinite networks of nonlinear systems. *IEEE Transactions on Automatic Control*, 68(3):1447–1462, 2023. Preprint

[29] N. Noroozi, A. Mironchenko, Ch. Kawan, M. Zamani. A small-gain theorem for set stability of infinite networks: Distributed observation and ISS for time-varying networks. *European Journal of Control*, 67:100634, 2022. Preprint

[28] N. Noroozi, A. Mironchenko, F. Wirth. A relaxed small-gain theorem for discrete-time infinite networks. *Automatica*, 142:110363, 2022. Preprint

[27] (2023 IEEE CSS George S. Axelby Outstanding Paper) Preprint
Ch. Kawan, A. Mironchenko, A. Swikir, N. Noroozi, M. Zamani. A Lyapunov-based small-gain theorem for infinite networks. *IEEE Transactions on Automatic Control*, 66(12):5830–5844, 2021.

[26] A. Mironchenko, N. Noroozi, Ch. Kawan, M. Zamani. ISS small-gain criteria for infinite networks with linear gain functions. *Systems & Control Letters*, 157:105051, 2021. Preprint

[25] A. Mironchenko, Ch. Kawan, J. Glück. Nonlinear small-gain theorems for input-to-state stability of infinite interconnections. *Mathematics of Control, Signals, and Systems (MCSS)*, 33:573–615, 2021. Preprint

[24] J. Glück, A. Mironchenko. Stability criteria for positive linear discrete-time systems. *Positivity*, 25(5):2029–2059, 2021. Preprint

[23] A. Mironchenko. Non-uniform ISS small-gain theorem for infinite networks. *IMA Journal of Mathematical Control and Information*, 38(4):1029–1045, 2021. Preprint

[22] A. Mironchenko, Ch. Prieur, F. Wirth. Local stabilization of an unstable parabolic equation via saturated controls. *IEEE Transactions on Automatic Control*, 66(5):2162–2176, 2021. Preprint

[21] A. Mironchenko. Small gain theorems for general networks of heterogeneous infinite-dimensional systems. *SIAM Journal on Control and Optimization*, 59(2):1393–1419, 2021. Preprint

[20] (*) A. Mironchenko, Ch. Prieur. Input-to-state stability of infinite-dimensional systems: recent results and open questions. *SIAM Review*, 62(3):529–614, 2020. Preprint

[19] (*) B. Jacob, A. Mironchenko, J. R. Partington and F. Wirth. Noncoercive Lyapunov functions for input-to-state stability of infinite-dimensional systems. *SIAM Journal on Control and Optimization*, 58(5):2952–2978, 2020. Preprint

[18] A. Mironchenko, F. Wirth. Existence of non-coercive Lyapunov functions is equivalent to integral uniform global asymptotic stability. *Mathematics of Control, Signals, and Systems*, 31(4):1–26, 2019. Preprint

[17] A. Mironchenko, F. Wirth. Non-coercive Lyapunov functions for infinite-dimensional systems. *Journal of Differential Equations*, 266(11):7038–7072, 2019. Preprint

[16] A. Mironchenko, I. Karafyllis, M. Krstic. Monotonicity methods for input-to-state stability of nonlinear parabolic PDEs with boundary disturbances. *SIAM Journal on Control and Optimization*, 57(1):510–532, 2019. Preprint

[15] A. Mironchenko. Criteria for input-to-state practical stability. *IEEE Transactions on Automatic Control*, 64(1):298–304, 2019. Preprint

[14] A. Mironchenko, F. Wirth. Lyapunov characterization of input-to-state stability for semilinear control systems over Banach spaces. *Systems & Control Letters*, 119:64–70, 2018. Preprint

[13] (*) A. Mironchenko, F. Wirth. Characterizations of input-to-state stability for infinite-dimensional systems. *IEEE Transactions on Automatic Control*, 63(6):1602–1617, 2018. Preprint

[12] A. Mironchenko, G. Yang, D. Liberzon. Lyapunov small-gain theorems for networks of not necessarily ISS hybrid systems. *Automatica*, 88:10–20, 2018. Preprint

[11] A. Mironchenko. Uniform weak attractivity and criteria for practical global asymptotic stability. *Systems & Control Letters*, 105:92–99, 2017. Preprint

[10] A. Mironchenko, H. Ito. Characterizations of integral input-to-state stability for bilinear systems in infinite dimensions. *Mathematical Control and Related Fields*, 6(3):447–466, 2016. Preprint

[9] A. Mironchenko. Local input-to-state stability: characterizations and counterexamples. *Systems & Control Letters*, 87:23–28, 2016. Preprint

[8] A. Mironchenko, H. Ito. Construction of Lyapunov functions for interconnected parabolic systems: an iISS approach. *SIAM Journal on Control and Optimization*, 53(6):3364–3382, 2015. Preprint

[7] A. Mironchenko, F. Wirth, K. Wulff. Stabilization of switched linear differential-algebraic equations via time-dependent switching signals. *IEEE Transactions on Automatic Control*, 60(8):2102–2113, 2015. Preprint

[6] A. Mironchenko, J. Kozłowski. Optimal allocation patterns and optimal seed mass of a perennial plant. *Journal of Theoretical Biology*, 354:12–24, 2014. Preprint

[5] (*) S. Dashkovskiy, A. Mironchenko. Input-to-state stability of nonlinear impulsive systems. *SIAM Journal on Control and Optimization*, 51(3):1962–1987, 2013. Preprint

[4] S. Dashkovskiy, A. Mironchenko. Input-to-state stability of infinite-dimensional control systems. *Mathematics of Control, Signals, and Systems*, 25(1):1–35, 2013. Preprint

[3] S. Dashkovskiy, M. Kosmykov, A. Mironchenko, L. Naujok. Stability of interconnected impulsive systems with and without time-delays using Lyapunov methods. *Nonlinear Analysis: Hybrid Systems,* 6(3):899–915, 2012. Preprint

[2] S. Dashkovskiy, M. Görges, M. Kosmykov, A. Mironchenko, L. Naujok. Modelling and stability analysis of autonomous controlled production networks. *Logistics Research*, 3(2):145–157, 2011. Preprint

[1] S. Dashkovskiy, H.-J. Kreowski, S. Kuske, A. Mironchenko, L. Naujok, C. von Totth. Production networks as communities of autonomous units and their stability. *International Electronic Journal of Pure and Applied Mathematics*, 2(1):17–42, 2010.

Conference articles and book chapters (published & accepted)

[36] A. Mironchenko, F. Schwenninger. Coercive quadratic ISS Lyapunov functions for analytic systems. *Proc. of 62nd IEEE Conference on Decision and Control*, Singapore, pp. 4699–4704, 2023.

[35] A. Mironchenko. Live systems of varying dimension: modeling and stability. *Proc. of 62nd IEEE Conference on Decision and Control*, Singapore, pp. 3956–3961, 2023.

[34] J. Glück, A. Mironchenko. Revisiting stability of positive linear discrete-time systems. *Proc. of the 25th International Symposium on Mathematical Theory of Networks and Systems*, Bayreuth, Germany, pp. 126–131, 2022.

[33] Ch. Kawan, A. Mironchenko, M. Zamani. Construction of ISS Lyapunov functions for infinite networks of ISS systems. *Proc. of 60th IEEE Conference on Decision and Control*, Austin, Texas, pp. 4811–4816, 2021.

[32] A. Mironchenko, N. Noroozi, C. Kawan, M. Zamani. A small-gain approach to ISS of infinite networks with homogeneous gain operators. *Proc. of 60th IEEE Conference on Decision and Control*, Austin, Texas, pp. 4817–4822, 2021.

[31] N. Noroozi, A. Mironchenko, C. Kawan, M. Zamani. Set stability of infinite networks: ISS small-gain theory and its applications. *IFAC-PapersOnLine*, 54(9):72–77, 2021.

[30] N. Noroozi, A. Mironchenko, F. Wirth. A relaxed small-gain theorem for discrete-time infinite networks. *Proc. of 59th IEEE Conference on Decision and Control*, Jeju Island, Korea, pp. 3102–3107, 2020.

[29] A. Mironchenko. Lyapunov functions for input-to-state stability of infinite-dimensional systems with integrable inputs. *IFAC-PapersOnLine*, 53(2):5336–5341, 2020.

[28] C. Kawan, A. Mironchenko, A. Swikir, N. Noroozi, M. Zamani. A spectral small-gain condition for input-to-state stability of infinite networks. *IFAC-PapersOnLine*, 53(2):5303–5308, 2020.

[27] A. Mironchenko. Small-gain theorems for stability of infinite networks. *Proc. of 58th IEEE Conference on Decision and Control*, Nice, France, pp. 5617–5622, 2019.

[26] S. Dashkovskiy, A. Mironchenko, J. Schmid and F. Wirth. Stability of infinitely many interconnected systems. *Proc. of the Joint Conference 8th IFAC Symposium on Mechatronic Systems, and 11th IFAC Symposium on Nonlinear Control Systems*, Vienna, Austria, 937–942, 2019.

[25] A. Mironchenko, Ch. Prieur and F. Wirth. Design of saturated controls for an unstable parabolic PDE. *Proc. of the Joint Conference 8th IFAC Symposium on Mechatronic Systems, and 11th IFAC Symposium on Nonlinear Control Systems*, Vienna, Austria, 452–457, 2019.

[24] A. Mironchenko. Small gain theorems for networks of heterogeneous systems. *Proc. of the Joint Conference 8th IFAC Symposium on Mechatronic Systems, and 11th IFAC Symposium on Nonlinear Control Systems*, Vienna, Austria, pp. 925–930, 2019.

[23] B. Jacob, A. Mironchenko, J. R. Partington and F. Wirth. Remarks on input-to-state stability and non-coercive Lyapunov functions. *Proc. of 57th IEEE Conference on Decision and Control*, Miami Beach, USA, pp. 4803–4808, 2018.

[22] A. Mironchenko, F. Wirth. Integral uniform global asymptotic stability and non-coercive Lyapunov functions. *Proc. of 23rd International Symposium on Mathematical Theory of Networks and Systems*, Hong Kong, pp. 734–741, 2018.

[21] A. Mironchenko, I. Karafyllis, M. Krstic. Input-to-state stability of nonlinear parabolic PDEs with Dirichlet boundary disturbances. *Proc. of 23rd International Symposium on Mathematical Theory of Networks and Systems*, Hong Kong, pp. 38–44, 2018.

[20] A. Mironchenko, F. Wirth. Input-to-state stability of time-delay systems: criteria and open problems. *Proc. of 56th IEEE Conference on Decision and Control*, Melbourne, Australia, pp. 3719–3724, 2017.

[19] A. Mironchenko, F. Wirth. A non-coercive Lyapunov framework for stability of distributed parameter systems. *Proc. of 56th IEEE Conference on Decision and Control*, Melbourne, Australia, pp. 1900–1905, 2017.

[18] G. Yang, D. Liberzon, A. Mironchenko. Analysis of different Lyapunov function constructions for interconnected hybrid systems. *Proc. of 55th IEEE Conference on Decision and Control*, Las Vegas, Nevada, USA, pp. 465–470, 2016.

[17] A. Mironchenko, F. Wirth. Global converse Lyapunov theorems for infinite-dimensional systems. *Proc. of 10th IFAC Symposium on Nonlinear Control Systems*, Monterey, California, USA, 909–914, 2016.

[16] A. Mironchenko, F. Wirth. Restatements of input-to-state stability in infinite dimensions: what goes wrong? *Proc. of 22nd International Symposium on Mathematical Theory of Networks and Systems*, Minneapolis, Minnesota, USA, pp. 667–674, 2016.

[15] A. Mironchenko, F. Wirth. A note on input-to-state stability of linear and bilinear infinite-dimensional systems. *Proc. of 54th IEEE Conference on Decision and Control*, Osaka, Japan, pp. 495–500, 2015.

[14] A. Mironchenko, H. Ito. Construction of iISS Lyapunov functions for interconnected parabolic systems. Proc. of European Control Conference 2015, 15.07.-17.07.2015, Linz, Austria, pp. 37–42, 2015.

[13] A. Mironchenko, H. Ito. Integral input-to-state stability of bilinear infinite-dimensional systems. *Proc. of 53rd IEEE Conference on Decision and Control*, Los Angeles, USA, pp. 3155–3160, 2014.

[12] S. Dashkovskiy, A. Mironchenko. Stability of nonlinear infinite dimensional impulsive systems and their interconnections. *Proc. of 53rd IEEE Conference on Decision and Control*, Los Angeles, USA, pp. 2071–2076, 2014.

[11] A. Mironchenko, G. Yang, D. Liberzon. Lyapunov small-gain theorems for not necessarily ISS hybrid systems. *Proc. of 21st International Symposium on Mathematical Theory of Networks and Systems*, Groningen, Netherlands, pp. 1001–1008, 2014.

[10] S. Dashkovskiy, A. Mironchenko. Lyapunov methodology for stability analysis of impulsive systems. *Proc. of the SICE Multi Symposium on Control Systems 2014*, Tokyo, Japan, 2014 (Proceedings CD).

[9] A. Mironchenko, F. Wirth, K. Wulff. Stabilization of switched linear differential-algebraic equations via time-dependent switching signals. *Proc. of 52nd IEEE Conference on Decision and Control*, Florence, Italy, pp. 5975–5980, 2013.

[8] A. Mironchenko, J. Kozłowski. Optimal allocation strategies of perennial plants. *Proc. of 52nd IEEE Conference on Decision and Control*, Florence, Italy, pp. 3361–3366, 2013.

[7] S. Dashkovskiy and A. Mironchenko. Constructions of ISS-Lyapunov functions for interconnected impulsive systems. *Proc. of 51st IEEE Conference on Decision and Control*, Hawaii, USA, pp. 6831–6836, 2012.

[6] S. Dashkovskiy, A. Mironchenko. Dwell-time conditions for robust stability of impulsive systems. *Proc. of 20th International Symposium on Mathematical Theory of Networks and Systems*, Melbourne, Australia, 2012 (paper 72, Proceedings CD).

[5] S. Dashkovskiy, A. Mironchenko. Local ISS of reaction-diffusion systems. *Proc. of 18th IFAC World Congress*, Milan, Italy, pp. 11018–11023, 2011.

[4] S. Dashkovskiy, A. Mironchenko, L. Naujok. Autonomous and central control of production networks. In: *Autonomous Cooperation and Control in Logistics,* M. Hülsmann, B. Scholz-Reiter, K. Windt (Eds.), pp. 27–43, Springer Verlag, 2011.

[3] S. Dashkovskiy, A. Mironchenko. On the uniform input-to-state stability of reaction-diffusion systems. *Proc. of 49th IEEE Conference on Decision and Control*, Atlanta, USA, pp. 6547–6552, 2010.

[2] S. Dashkovskiy, H. R. Karimi, M. Kosmykov, A. Mironchenko, L. Naujok. Application of the LISS Lyapunov-Krasovskii small-gain theorem to autonomously controlled production networks with time-delays. *Proc. of the Conference on Control and Fault-Tolerant Systems*, Nice, France, pp. 765–770, 2010.

[1] S. Dashkovskiy, H.-J. Kreowski, S. Kuske, A. Mironchenko, L. Naujok, C. von Totth. Production networks as communities of autonomous units and their stability. *Proc. of 3rd International Workshop on Graph Computation Models*, Enschede, Netherlands, pp. 17–32, 2010.

Theses

[3] A. Mironchenko. Input-to-state stability of distributed parameter systems. Habilitation thesis, Faculty of Computer Science and Mathematics, University of Passau, 2023.

[2] A. Mironchenko. Input-to-state stability of infinite-dimensional control systems. PhD thesis, Department of Mathematics and Computer Science, University of Bremen, 2012.

[1] A. Mironchenko. Mathematical modeling of agrocoenosis. Master's thesis, Department of Applied Mathematics, Mechnikov Odesa National University, 2008.

Editorials

[1] B. Jacob, A. Mironchenko, F. Schwenninger. Input-to-state stability for infinite-dimensional systems. *Mathematics of Control, Signals, and Systems,* 34(1): 215–216, 2022.

TALKS

Check my YouTube channel for all my online talks.

[69] (planned) Live systems of varying dimension: modeling and stability. *62nd IEEE Conference on Decision and Control (CDC 2023)*, Singapore, December 2023.

[68] (planned) Coercive quadratic ISS Lyapunov functions for analytic systems. *62nd IEEE Conference on Decision and Control (CDC 2023)*, Singapore, December 2023.

[67] (planned) A case study of port-Hamiltonian systems with a moving interface. *62nd IEEE Conference on Decision and Control (CDC 2023)*, Singapore, December 2023.

[66] Quadratic Lyapunov functions for linear infinite-dimensional control systems. *DMV Meeting 2023*, Ilmenau, Germany, September 2023.

[65] Robust forward completeness: a bridge between well-posedness and stability. *Online ISS Seminar*, August 2023.

[64] Lyapunov characterizations for robust forward completeness of distributed parameter systems. *29th Nordic Congress of Mathematicians with EMS*, Aalborg, Denmark, July 2023.

[63] Lyapunov ISS small-gain theorem for nonlinear infinite networks. *29th Nordic Congress of Mathematicians with EMS*, Aalborg, Denmark, July 2023.

[62] Puzzles of converse Lyapunov theory for infinite-dimensional systems. *Talk at the Séminaire d'Automatique du Plateau de Saclay*, June 2023.

[61] **(Video)** Lyapunov method for robust stability of infinite-dimensional systems. *Talk at the Colloquium of the Department of Mathematics of the University of Bayreuth*, April 2023.

[60] ISS of distributed parameter systems: state of the art and open problems. *Talk at the Seminar "Dynamical Systems and Control Theory" at the University of Würzburg*, January 2023.

[59] **(Video)** Input-to-state stability of distributed parameter systems. *Habilitation colloquium*, Passau, Germany, December 2022.

[58] **(Video)** Revisiting stability of positive linear discrete-time systems. *25th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2022)*, Bayreuth, Germany, September 2022.

[57] Small-gain conditions for robust stability of nonlinear infinite networks. *25th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2022)*, Bayreuth, Germany, September 2022.

[56] Well-posedness and robust stability of evolution equations. *Talk at the Workshop on Systems Theory and PDEs (WOSTAP)*, Freiberg, Germany, July 2022.

[55] **(Video)** Semilinear boundary control systems: Well-posedness and stability. *Talk at the Online Seminar "Dynamical systems" at the Uni Passau*, July 2022.

[54] **(Video)** A small-gain approach to ISS of infinite networks with homogeneous gain operators. *60th IEEE Conference on Decision and Control (CDC 2021)*, Austin, Texas, USA, December 2021.

[53] **(Video)** Construction of ISS Lyapunov Functions for Infinite Networks of ISS Systems. *60th IEEE Conference on Decision and Control (CDC 2021)*, Austin, Texas, USA, December 2021.

[52] Stability of infinite networks. Interactive Session at the (virtual) Workshop "Stability and Control of Infinite-Dimensional Systems" (SCINDIS-2020), Wuppertal, Germany, 2021.

[51] Robust stability of PDEs with boundary disturbances. *Joint workshop of the GAMM activity groups "Dynamics and control theory" and "Optimization with partial differential equations"*, Bayreuth, Germany, September 2021.

[50] ISS of boundary control systems. *Tutorial Session on "Stability and Robust Control of PDEs and Large Scale Networks"*, ECC21, July 2021.

[49] Stability analysis of large-scale and infinite networks. *Tutorial Session on "Stability and Robust Control of PDEs and Large Scale Networks"*, ECC21, July 2021.

[48] **(Video)** Stability of networks of infinite-dimensional systems. *Online Seminar on Dynamical Systems*, June 2021.

[47] **(Video)** Lyapunov functions for ISS of infinite-dimensional systems with integrable inputs. *21st IFAC World Congress (IFAC WC 2020)*, Berlin, Germany, 2020.

[46] **(Video)** A spectral small-gain condition for input-to-state stability of infinite networks. *21st IFAC World Congress (IFAC WC 2020)*, Berlin, Germany, 2020.

[45] Small-gain theorems for stability of infinite networks. *58th IEEE Conference on Decision and Control (CDC 2019)*, Nice, France, 2019.

[44] Foundations of infinite-dimensional input-to-state stability theory. Applied Math Colloquium at the University Erlangen-Nürnberg (invited by Enrique Zuazua), Erlangen, Germany, 2019.

[43] Foundations of infinite-dimensional input-to-state stability theory. Research seminar (invited by Wilfrid Perruquetti), CNRS CRIStAL Lille - Université de Lille, Lille, France, 2019.

[42] Small gain theorems for networks of heterogeneous systems. Joint Conference 8th IFAC Symposium on Mechatronic Systems (MECHATRONICS 2019), and 11th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2019), Vienna, Austria, 2019.

[41] Design of saturated controls for an unstable parabolic PDE. Joint Conference 8th IFAC Symposium on Mechatronic Systems (MECHATRONICS 2019), and 11th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2019), Vienna, Austria, 2019.

[40] Stability of networks of infinite-dimensional systems. Research seminar (invited by Felix Schwenninger), University of Twente, Enschede, the Netherlands, 2019.

[39] Lyapunov approach for input-to-state stability of boundary control systems. *GIPSA-lab*, Grenoble, France, 2019.

[38] Lyapunov functions for boundary control systems. *13th Elgersburg Workshop*, Elgersburg, 2019.

[37] (Topical Talk) Foundations and applications of infinite-dimensional input-to-state stability theory. *90th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM)*, Vienna, 2019.

[36] Criteria for input-to-state practical stability. *Workshop "Stability and Control of Infinite-Dimensional Systems" (SCINDIS-2018)*, Würzburg, Germany, 2018.

[35] Integral uniform global asymptotic stability and non-coercive Lyapunov functions. *23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS 2018)*, Hong-Kong, 2018.

[34] Input-to-state stability of nonlinear parabolic PDEs with Dirichlet boundary disturbances. *23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS 2018)*, Hong-Kong, 2018.

[33] Characterizations of input-to-state practical stability for finite-dimensional and infinite-dimensional systems. *23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS 2018)*, Hong-Kong, 2018.

[32] Non-coercive Lyapunov functions for stability analysis of nonlinear infinite-dimensional systems. Workshop "Control theory of infinite-dimensional systems", FernUniversität in Hagen, Hagen, Germany, 2018.

[31] Characterizations of input-to-state stability for wide classes of control systems. Workshop "Control of Distributed Parameter Systems" (CDPS 2017), University of Bordeaux, Bordeaux, France, 2017.

[30] Towards unified input-to-state stability theory. Invited talk at iCODE Seminar in Automatic Control of Paris-Saclay University, *CentraleSupélec*, Gif-sur-Yvette, France, 2017.

[29] Input-to-state stability of infinite-dimensional systems: recent results and open problems. Research seminar (invited by Sergey Dashkovskiy), *University of Würzburg*, Würzburg, Germany, 2017.

[28] Input-to-state stability of distributed parameter systems: characterizations and counterexamples. *Workshop "Stability and Control of Infinite-Dimensional Systems" (SCINDIS)*, Passau, Germany, 2016.

[27] Global converse Lyapunov theorems for infinite-dimensional systems. *10th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2016)*, Monterey, California, USA, 2016.

[26] Input-to-state stability of infinite-dimensional systems: characterizations and counterexamples. Research seminar (invited by Miroslav Krstic), *University of California, San Diego*, San-Diego, USA, 2016.

[25] Restatements of input-to-state stability in infinite dimensions: what goes wrong? *22nd International Symposium on Mathematical Theory of Networks and Systems (MTNS 2016)*, Minneapolis, Minnesota, USA, 2016.

[24] Construction of iISS Lyapunov functions for interconnected parabolic systems. *European Control Conference 2015*, Linz, Austria, 2015.

[23] On characterizations of input-to-state stability for infinite-dimensional systems. *SIAM Conference on Control and Applications*, Paris, France, 2015.

[22] Constructions of Lyapunov functions for nonlinear parabolic control systems: an integral ISS approach. *Meeting of the GAMM-Fachauschuss "Dynamik und Regelungstheorie"*, Hamburg, Germany, 2015.

[21] Lyapunov methods for nonlinear integral input-to-state stable systems. Wuppertal ISS-Day (invited by Birgit Jacob), *University of Wuppertal*, Wuppertal, Germany, 2015.

[20] Stability and interconnections of ODEs and impulsive systems. Research seminar (invited by Sergey Polozhaenko), *Odesa National Polytechnic University*, Odesa, Ukraine, 2014.

[19] Stability and interconnections of ODEs and impulsive systems. Research seminar (invited by Olga Kichmarenko), *I.I. Mechnikov Odesa National University*, Odesa, Ukraine, 2014.

[18] Lyapunov small-gain theorems for not necessarily ISS hybrid systems. *21st International Symposium on Mathematical Theory of Networks and Systems (MTNS 2014)*, Groningen, Netherlands, 2014.

[17] Lyapunov methods for robust stability of distributed parameter systems. Research seminar (invited by Dr. Gou Nishida), *Kyoto University*, Kyoto, Japan, 2014.

[16] Robust stability of interconnections of infinite-dimensional systems: an ISS approach. Research seminar (invited by Hiroyuki Ichihara), *Meiji University*, Kawasaki city, Japan, 2014.

[15] Lyapunov methodology for stability analysis of impulsive systems. *SICE Multi-Symposium on Control Systems 2014 (MSCS2014)*, Tokyo, Japan, 2014.

[14] Stability and interconnections of hybrid and impulsive systems. Research seminar (invited by Hiroshi Ito), *Kyushu Institute of Technology*, Fukuoka, Japan, 2014.

[13] Stabilization of switched linear differential-algebraic equations via time-dependent switching signals. *52nd IEEE Conference on Decision and Control (CDC 2013)*, Florence, Italy, 2013.

[12] Optimal allocation strategies of perennial plants. *52nd IEEE Conference on Decision and Control (CDC 2013)*, Florence, Italy, 2013.

[11] Input-to-state stability of distributed parameter systems. Research seminar (invited by Daniel Liberzon), *University of Illinois at Urbana-Champaign (UIUC)*, Urbana-Champaign, IL, USA, 2013.

[10] Stabilization of DAEs via time-dependent switching. Research seminar (invited by Lars Grüne), *University of Bayreuth*, Bayreuth, Germany, 2013.

[9] Stabilization of linear switched DAEs via switching signal. *Workshop "Deskriptor 2013"*, Geseke, Germany, 2013.

[8] Constructions of ISS-Lyapunov functions for interconnected impulsive systems. *51st IEEE Conference on Decision and Control (CDC 2012)*, Hawaii, USA, 2012.

[7] Optimal allocation patterns and optimal seed mass of a perennial plant. Research seminar (invited by Jan Kozłowski), *Jagiellonian University*, Kraków, Poland, 2012.

[6] Dwell-time conditions for robust stability of impulsive systems. *20th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2012)*, Melbourne, Australia, 2012.

[5] Dwell-time conditions for input-to-state stability of impulsive systems. *Meeting of the GAMM-Fachauschuss "Dynamik und Regelungstheorie"*, Stuttgart, Germany, 2012.

[4] Input-to-state stability of infinite-dimensional systems (Blackboard talk). Research seminar (invited by Hans Triebel), *University of Jena*, Jena, Germany, 2012.

[3] Local ISS of reaction-diffusion systems. *18th IFAC World Congress (IFAC 2011)*, Milan, Italy, 2011.

[2] Input-to-state stability of systems of partial differential equations. *Elgersburg Workshop 2011*, Elgersburg, Germany, 2011.

[1] Mathematical modeling of the agrocoenosis. Research seminar (invited by Sergey Dashkovskiy), *University of Bremen*, Bremen, Germany, 2009.