Nom : POLYAKOV
Last name

Prenom : Andrey
First name

CURRIVULUM VITAE

Nom : POLYAKOV
Last Name

Prénom : Andrey
First Name

Date et lieu de naissance : 08/01/1980, Voronezh (Russia)
Date and place of birth
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Valse Team
Mailing address

1) Diplômes / *Diplomas*

Habilitation à diriger des recherches (HDR)
Habilitation or equivalent degree
Intitulé : . . . . . Linear Geometric Homogeneity for Control and Estimation in a Finite Time
Title
Date de soutenance : 29.11.2018
Date of the defense of the HDR.
Établissement ayant délivré le diplôme : The University of Lille, France
Granting institution

Doctorat(s) / ***Ph.D.(s)***
Intitulé : . . . . . Control of neutral and unstable plants using relay delayed feedback control
Title
Date de soutenance : 15.12.2005
Date of the defense of the Ph.D.
Établissement ayant délivré la thèse : . . . . . Voronezh State University, Russia
Granting institution
Entité d'accueil (laboratoire, équipe, etc.) pour la préparation de la thèse : Dep. Computational Mathematics
Host entity (laboratory, team, etc.) for the preparation of the Ph.D.

Master ou équivalent / ***Master's or equivalent***
Intitulé : . . . . . Control of the systems with relay feedback
Title
Date : 21.06.2003
Date
Établissement ayant délivré le diplôme : . . . . . Voronezh State University, Russia
Granting institution
Organisme où s'est déroulé le stage : . . . . . Faculty of Applied Mathematics and Mechanics
Institution where the training course took place

2) Parcours Professionnel / *Professionnal history*

2.1) Situation professionnelle actuelle / *Current professionnal status*

Statut et fonction : . . . . . CR Inria (Full-time Researcher)
Position and statute

Centre de recherche Inria : Lille – Nord Europe
Inria Research Center
Équipe-projet de recherche : Valse project-team
Project-team

2.2) Expériences professionnelles antérieures / *Previous professionnal experiences*

Dates début *Start*	Dates fin *End*	Établissements *Institutions*	Fonctions et statuts[2] *Positions and status*[2]
17.06.2010	01.10.2013	Institute of Control Sciences, Russian Academy of Sciences	Leading Researcher - permanent
01.09.2008	16.06.2010	Voronezh State University, Russia	Associate Professor - permanent
15.08.2007	15.08.2008	CINVESTAV-IPN, Mexico	Postdoc - temporary
01.09.2004	14.08.2007	Voronezh State University, Russia	Lecturer - permanent

3) Membre des comités / *Member of committees*

- Editor of "Visnyk of Kharkiv National University. Ser. Mathematics, Applied Mathematics and Mechanics" (Ukraine), 2016 - Now
- Editor of Automation and Remote Control, 2015-Now
- Editor of Journal of Optimization Theory and Applications (JOTA), 2014-2018
- Editor of International Journal of Robust and Nonlinear Control, 2014-2018
- Editor of Journal of the Franklin Institute, 2014-2016

4) Projets de recherche / *Research projects*

- ANR PRC DIGISLID (2018-2022)
  Subject: "Digital set-valued and homogeneous sliding mode control and differentiators: the implicit approach"
  Coordinator: Bernard Brogliato
  Partners: Inria Grenoble, Inria Lille, CNRS LS2N (Nantes)
- ANR PRC Finite4SoS (2015-2020)
  Subject: "Finite-time Control and Estimation for Systems of Systems"
  Coordinator: Wilfrid Perruquetti
  Partners: Inria Lille, Universite Pierre et Marie Curie, MINES ParisTech
- ANR JCJC ROCC-SYS (2014-2018)
  Subject: "Robust control of cyber-physical systems"
  Leader: Laurentiu Hetel
  People involved: Andrey Polyakov, Christophe Fiter, Alexandre Kruszewski
- ANR PRC Chaslim (2011-2015)
  Subject: "Chattering-free sliding modes"
  Coordinator: Bernard Brogliato
  Partners: Inria Grenoble, Inria Lille, CNRS IRCCyN
- CPER DATA, project "ControlHub" (2016-Now)
  Leader: Andrey Polyakov
  Participants: Dagher Roudy, Dherbomez Gerald, Jean-Pierre Richard, Denis Efimov

- CPER ELSAT2020, project "Contratech" (2015-2021)
  Coordinator: Jean-Marc Foucaut
  Partners: Univ. Vallenciennes, Centrale Lille, LMFL, CNRS LAMIH, ONERA, Inria Lille, CNRS CRIStAL
- "RECoT" Inria Associate team (2018-2020)
  Subject: "Robust Estimation and Control with Time Constraints"
  Leader: Andrey Polyakov (Inria) Partners: Inria, Lille, Frane and IBM Research, Dublin, Ireland
- "HoTSMoCE" Inria Associate team (2017-2019)
  Subject: "Homogeneity Tools for Sliding Mode Control and Estimation"
  Leader: Denis Efimov (Inria) Partners: Inria, Lille and UNAM, Mexico
- ADT "SEEC", Inria

5) Conférences invitées / *Invited Talks*

- Plenary Talks on International Conferences:
  - "Generalized Homogeneous Stabilization via Sliding Modes", the 16th International Workshop on Variable Structure Systems, Rio de Janeiro, Brasil, 11-14 September 2022
- Invited Talks on International Conferences:
  - "Active Flow Control: Sliding Mode Control Approach", Workshop on Active Drag Reduction Aachen, Germany, 15-16 March 2018
  - "Sliding mode control of flow separation", 2nd Workshop on Machine Learning Control, Valenciennes, France, July 5th-6th , 2017
  - "Robust Stabilization with Time Constraints: Implicit Lyapunov Function Approach", International Conference "Optimization And Applications in Control and Data Science", Moscow, Russia, 13-15 May 2015
- Invited Talks on International Seminars:
  - "Upgarding Linear to a Sliding Mode Controllers", Webinar of Sliding Mode Contol Lab, UNAM, Mexico, 17th November 2021
  - "On Input-to-State Stability of Homogeneous Evolution Equations", Webinar "Input-to-State Stability and its Applications", University of Passau, Germany, 7 Ocrober 2021
  - " On Generalized Homogeneous State Estimation of Finite-Dimensional Systems", Webinar of Sliding Mode Contol Lab, UNAM, Mexico, 17th March 2021
  - " On Generalized Homogeneous Control for Finite-Dimensional Linear Systems", Webinar of Sliding Mode Contol Lab, UNAM, Mexico, 10th March 2021
  - "Upgrading Linear PID Controllers: Method of Generalized Homogeneity", QYouser Webinar of Quanser Company, Canada, 3 November 2020
- Invited Talks:
  - TechLaguna, Torreon, Mexico, 2021, by an invitation from Dr. Hector Rios
  - iCODE Seminar, SUPELEC, France, 2017, by an invitation from Prof. Yacine Chitour
  - Institute Petroleum of Abu-Dhabi, Emerates, 2014, by an invitation from Prof. Igor Boiko
  - CINVESTAV-IPN, Mexico, 2009 & 2012, by a invitation from Prof. Alex Poznyak

6) Eléments divers / *Other relevant information*

International collaborations:

Starting from	Country	Institution	Person	Activities
2022	USA	Univ. California, SD	Prof. Miroslav Krstic	Joint research [IC1]
2019	USA	Ohio State University	Prof. Vadim Utkin	Joint research [B2,IJ23]
2016	Israel	Tel-Aviv State Univ.	Prof. Arie Levant	Joint research [IJ44,IJ46,...] Visits and sabbatical at Inria
2015	Israel	Tel-Aviv State Univ.	Prof. Emilia Fridman	Joint research [IJ27,IJ32,...] Inria Invited Professor
2014	Mexico	UPIBI-IPN	Dr. Isaac Chairez	Joint research [**?**], Students Internships
2014	Ireland	IBM Research	Dr. Sergiy Zhuk	Joint research [IC17,IC30„...] Associate Team RECoT
2007	Mexico	CINVESTAV-IPN	Prof. Alex Poznyak	Joint research [IC27,B2,IJ23...] Internships of PhD Students
2001	Mexico	UNAM	Prof. Leonid Fridman	Joint research [IJ64,IJ72,...] Inria International Chair

Please see Google Scholar for more complete list of my collaborators.

National collaborations:

Starting from	Institution	Person	Activities
2018	Inria Sophia Antipolis	Prof. Jean-Luc Gouzé	Joint research [IJ29,IC24,IC33,...] Joint project Inria IPL Cozy
2016	Univ. Pierre et Marie Curie	Prof. Jean-Michel Coron	Joint research [IJ39,IC59,IC65] Joint project ANR Finite4SoS
2016	MINES ParisTech	Prof. Lionel Rosier	Joint research [IJ39,IC59,IC65] Joint Project ANR Finite4SoS
2015	Inria Grenoble	Prof. Bernard Brogliato	Joint research [IJ30,IJ38,IC40...] Joint project ANR DIGITSLID

Local collaborations:

Starting from	Institution	Person	Activities
2017	CNRS LAMIH	Prof. Laurent Keirsbulck	Joint projects: CPER ELSAT2020 Joint research: [IJ34]
2015	Inria Lille, DEFROST team	Dr. Gang Zheng	Joint research: [IJ20,IJ31, IJ47...] PhD co-supervision
2014	CNRS CRIStAL	Dr. Laurentiu Hetel	Joint research [IJ33, IJ54,IC56...] Joint Project ANR ROCC-SYS
2012	EC Lille	Prof. Wilfrid Perruquetti	Joint research [IJ5, IJ6...] Joint Project ANR Finite4SoS

My other local collaborators are Jean-Marc Foucaut (EC Lille) and Quentan Gallas (ONERA) and some members of CO2 group of CNRS CRIStAL (Joint research [IC96, IJ36, IC56]). My collaborators in the Valse team of Inria are Dr. Denis Efimov and Prof. Jean-Pierre Richard (retired since 01.09.20221).

7) Enseignement / *Teaching*

1. **Supervision of Post-Docs**:

- Manuel Mera, 07.2014-07.2015, 'Non-asymptotic Attractive Ellipsoids Method', supported by CONACYT, Mexico.

  - Joint publications: [IJ63, IJ56, IC80, IC105];

  - My involvement: 100%

  - Presently, Manuel Mera is an associate professor at ESIME, Instituto Politechnico Nacional, Mexico.

- Nicollas Espitia, 10.2017-10.2019, 'Finite-time control of PDEs', supported by Inria CORDIS (10.2017-02.2019) and CPER ELSAT2020 (02.2019-10.2019)

  - Joint publications: [IJ37, IC29, IC40, IC41];

  - My involvement: 100% for the period 02.2019-10.2019 and 33% for the period 10.2017-02.2019 (with Denis Efimov and Wilfrid Perruquetti);

  - Since 01.10.2019 Nicolas has been recruited as "chargé de recherche" at CNRS CRIStAL.

- Tonametl Sanchez, 10.2017-10.2019, 'Active Control of Flow Separation', supported by CPER ELSAT2020 (10.2017-10.2018) and ANR DIGITSLID (10.2018-10.2019).

  - Joint publications: [IJ19, IJ23, IJ25, IJ33, IJ36, IC18, IC47,IC50, IC57].

  - My involvement: 50% for the period 10.2017-10.2018 (with Jean-Pierre Richard) and 50% for the period 10.2018-10.2019 (with Denis Efimov);

  - Now Tonametl Sanchez is a permanent researcher at IPICYT, San Luis Potosi, Mexico;

- Gabriele Perozzi, 06.2020-06.2021, 'Discretization of Homogeneous Controllers', supported by ANR DIGITSLID;

  - Joint publications: [IJ3, IC11];

  - My involvement: 100%

  - Now Gabriele Perozzi works as an engineer with Capgemini Company in Toulouse.

2. **Supervision of PhD Students**

- Maxime Feingesicht, 01.01.2015 - 15.12.2017, 'Non-linear Active Control of Turbulent Separated Flows: Theory and Application', supported by Region Hauts-de-France;

  - My involvement: 33%; Director: Prof. Jean-Pierre Richard (EC-Lille);
    Co-Encadrants: Dr. Andrey Polyakov (Inria Lille) and Dr. Franck Kerherve (EC-Lille);
  - Joint publications: [IJ35, IJ49, IC61, IC60, IC73]; **Patent**: WO/2018/229442;
  - In 2018-2019, Maxime was a postdoctoral researcher at Michigan State University, USA. Presently, his is a postdoc at Chalmers University of Technology, Gotenburg, Sweden.

- Francisco Lopez Ramirez, 01.10.2015 - 19.11.2018, 'Implicit Lyapunov Function Method for Control and Estimation', supported by Inria CORDIS;

  - My involvement: 33%; Co-Directors: Dr. Denis Efimov (Inria Lille) and Prof. Wilfrid Perruquetti (EC-Lille); Co-Encadrant: Dr. Andrey Polyakov (Inria Lille);
  - Joint publications: [IJ30, IJ34, IJ41, IJ48, IC74, IC69, IC53].
  - Francisco preferred to continue his carrier in industry. He is presently an engineer of Altran Company in Strasbourg, France.

- Tatyana Kharkovskaya, 01.01.2016 - 02.12.2019, "Design of interval observers for systems described by PDE", cotutelle: Centrale Lille – ITMO University, Russia;

  - My involvement: 25%; Co-Directors: Prof. Jean-Pierre Richard (EC-Lille) and Dr. Artem Kremlev (ITMO University); Co-Encadrants: Dr. Denis Efimov (Inria Lille) and Dr. Andrey Polyakov (Inria Lille)
  - Joint Publications: [IJ27, IJ45, IC44, IC62, IC70];
  - Tatiana Kharkovskaya now is an assistant professor in ITMO University

- Siyuan Wang, 01.10.2017 - 15.12.2020, 'Homogeneous Quadrotor Control: Theory and Experiment', supported by CSC, China;

  - My involvement: 50%; Co-Directors: Dr. Gang Zheng (Inria Lille), Dr. Andrey Polyakov (Inria Lille)
  - Joint publications: [IJ9, IJ12,IJ20, IC26, IC35]. **Patent**: Deposit N: FR2004684

  - Siyuan Wang was recruited as Assistant Professor in INSA Centre Val de Loire, Campus Bourges.

- Youness Braidiz, 01.10.2017 - 14.12.2020, 'Relaxed Homogeneity Notions for finite-time and fixed-time stability analysis', supported by ANR Finite4SoS;
  - My involvement: 33%; Co-Directors: Prof. Wilfrid Perruquetti (EC-Lille) and Dr. Denis Efimov (Inria Lille), Co-Encadrant: Andrey Polyakov (Inria Lille)
  - Joint publications: [IJ4, IJ15, IJ24, IC23, IC24, IC36, IC37].
  - Youness Braidiz has a postdoc position in École des Mines de Paris.

- Alex dos Reis de Souza, 10.2018 - 10.2021, 'Control and Estimation Methods for Microbial Communities', supported by Inria IPL Cozy,
  - My involvement: 33%; Co-Directors: Dr. Denis Efimov (Inria Lille) and Prof. Jean-Luc Gouze (Inria Sophia Antipolis); Co-Encadrant: Andrey Polyakov (Inria Lille);
  - Joint publications: [IJ11, IJ28, IC22, IC31, IC32].
  - Alex dos Reis de Souza is a reseach engineer in ONERA, Toulouse

- Artem Nekhoroshikh, 01.01.2019 - 07.10.2022, "Homogeneous control of time-delay systems in the presence of perturbations", cotutelle: Centrale Lille – ITMO University, Russia;
  - My involvement: 25%; Co-Directors: Prof. Wilfrid Perruquetti (EC-Lille) and Prof. Igor Furtat (ITMO University); Co-Encadrants: Dr. Denis Efimov (Inria Lille), Dr. Andrey Polyakov (Inria Lille)
  - Joint Publications: [IJ5, IJ6, IC16, IC13, IC5]

- Yu Zhou, 01.11.2020-now, "Homogeneous Control Systems on Manifolds", supported by CSC China;
  - My involvement: 50%; Co-Directors: Dr. Andrey Polyakov (Inria Lille), Dr. Gang Zheng (Inria Lille)
  - Joint Publications: [IC10, IC8]

- Min Li, 01.10.2021-now, "Generalized Homogeneous Control and Estimation of Multi-Agent Systems", supported by CSC China;
  - My involvement: 50%; Co-Directors: Dr. Andrey Polyakov, Dr. Gang Zheng (Inria Lille),
  - Joint Publications: [IC4]

- Yuri Gou, 01.10.2021-01.11.2025, "Analysis and design of controllable flexible mechanisms", supported by CSC China;
  - My involvement: 50%; Co-Directors: Dr. Gang Zheng (Inria Lille), Dr. Andrey Polyakov (Inria Lille)

- Méricel Ayamou,15.11.2022-now "PDE-Based active flow control of turbulent separated flows", supported by Univ.Lille (50%)+ Region Hautes De France (50%)
  - My involvement: 100%; Director: Dr. Andrey Polyakov (Inria Lille)

3. **Supervision of Research Engineers**:

- Fiodar Hancharou, 11.2019-05.2021, 'ControlHub Experiment Server', supported by CPER DATA, Project ControlHub. My involvement: 100%

4. **Supervision of PhD internships** in Inria Lille and consultation of PhD research in Russia (= co-encadrement in France).

- David Cruz (Inria Internship: 01.09.2018-30.04.2019; CINVESTAV-IPN, Mexico; Co-supervisors: Dr. Isaac Chairez and Prof. Alexander Poznyak)

- Marianna Ballesteros (Inria Internship: 01.09.2018-30.04.2019; CINVESTAV-IPN, Mexico; Supervisors: Dr. Isaac Chairez and Prof. Alexander Poznyak)

- Konstantin Zimenko (Inria Internship: 1 month per year, 10.2015-12.2018, ITMO University, Russia; Supervisor: Artem Kremlev)
- Nadhynee Martinez Fonesca (Inria Internship: 01.09.2018-30.04.2019; UPIBI-IPN, Mexico; Supervisor: Dr. Isaac Chairez)
- Sergei Parsegov (2010-2013; Institute of Control Sciences of Russian Academy of Sciences; Supervisor: Pavel Shcherbakov; Consulter: Andrey Polyakov)
- Mikhail Kryachkov (2009-2012; Voronezh State University; Supervisor: Vadim Strygin)
- Solvador Gonzelez Garcia (2006-2009; CINVERAV-IPN, Mexico; Supervisor: Alexander Poznyak)

5. **Supervision of Masters Students**

- Erwin Jezequel (Internship, 2018, Centrale Lille)
- Marc Sanmillan (Internship, 2018, Centrale Lille)
- Dmitrii Kondratovich (2012; Institute of Control Sciences of Russian Academy of Sciences)
- Elena Maslennikova (2009, Voronezh State University)
- Aleksej Baushev (2009, Voronezh State University)
- Andrey Solov'ev (2009, Voronezh State University)
- Artem Batuev (2009, Voronezh State University)
- Evgenii Orazaev (2009, Voronezh State University)
- Sergej Kosinov (2007, Voronezh State University)
- Leonid Kukushkin (2007, Voronezh State University)
- Konstantin Chernyshev (2007, Voronezh State University)

6.**The Lessons**

- NSF ASI Lecture (5 hours):
  - Risk Analysis and Mitigation Design of Homogeneous Systems: Theory and Experiment (20 July 2022)
- Xidian University, China (36 hours):
  - "Introduction to Lyapunov Function Method", in July 2021(8 hours) and June 2022 (8 hours), for masters and PhD students
  - "Generalized Homogeneity in Systems and Control", in October-November 2022 (20 hours), for masters and PhD Students
- Voronezh State University (2004-2007 and 2008-2010; more than 3000 hours):
  - Algebra & Analytical Geometry (for bachelors of 1st year);
  - Programming Languages and Algorithms (for bachelors of 1st and 2nd years);
  - Algorithms for Sparse Matrices (for bachelors of 3rd year);
  - Mathematical Software (for bachelors of 3th year);
  - Algorithms of Computer Graphics (for bachelors of 4th year);
  - Relational Database Management Systems (for bachelors of 4th year);
  - Computational Mathematics (for bachelors of 3rd and 4th years);
  - Internet Programming (for masters of 1st year);
  - Linear Matrix Inequalities (for masters of 2nd year);

8. **Tutorial Courses and Workshops**

- IEEE Conference on Decision and Control 2019
  Workshop "Finite-, Fixed-, and Prescribed-Time Stabilization and Estimation";
  Organizers: Denis Efimov, Miroslav Krstic, Wilfrid Perruquetti, Andrey Polyakov, Drew Steeves;
  - "Homogeneous implicit Lyapunov functions for finite-time control and estimation" (1 hour)
  - "Discretization of Finite-time and Fixed-time Stable Systems" (0.5 hour)
- Traditional Whole-Russian School "Control, Information and Optimization"
  - 2011 (2 hours; "Lyapunov Function Design for High Order Sliding Modes");
  - 2015 (4 hours; "Stability Notions and Lyapunov Functions for Sliding Mode Control Systems")
- 6th IEEE International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE-2009), November 10-13, 2009, Toluca, Mexico
  - "Lyapunov Function Method for Nonlinear and Discontinuous Systems" (6 hours)

8) Publications / *Publications*

My three most representative publications:

- A. Polyakov, Nonlinear feedback design for fixed-time stabilization of linear control systems, IEEE Transactions on Automatic Control, 2012. This is my most cited paper with more than 2000 citations. It introduces a novel concept of fast (fixed-time) stabilization of control systems, which became very popular in the last years.
- A. Polyakov, D. Efimov, W. Perruquetti, Finite-time and fixed-time stabilization: Implicit Lyapunov function approach, Automatica, 2015. This paper was in the list of top 20 most cited papers published in Automatica in the last 5 years. The paper proposes a new (implicit) methodology of control systems design.
- A. Polyakov, Generalized Homogeneity in Systems and Control, Springer, 2020. This monograph is an introduction to the generailzed homogeneity theory being my main research direction in the last years.

I am (co-)authored more than **250** publications (including **3** books and more than **100** papers in peer-reviewed journals). The detailed list of publications is given below (**IF**=**I**mpact **F**actor of the journal). For my citation index see Goolge Scholar

I. International Peer-Reviewed Journals

IJ1. K. Zimenko, A. Polyakov, D. Efimov, A. Kremlev, Homogeneity-based finite/fixed-time observers for linear MIMO systems, **International Journal of Robust and Nonlinear Control**, 2022, (in press), (**IF**: 3.897)

IJ2. K. Zimenko, D. Efimov, A. Polyakov, Adaptive finite-time and fixed-time control design using output stability conditions, **International Journal of Robust and Nonlinear Control**, 2022, (in press), (**IF**: 3.897)

IJ3. G. Perozzi, A. Polyakov, F. Miranda-Villatoro, B. Brogliato, Upgrading a linear controller to a sliding mode one: Theory and experiments, **Control Engineering Practice**, 2022, 105107

IJ4. Y. Braidizi, A. Polyakov, D. Efimov, W. Perruquetti, On finite-time stability analysis of homogeneous vector fields with multiplicative perturbations, **International Journal of Robust and Nonlinear Control**, 2022, 32 (15), 8280-8292. (**IF**: 3.897)

IJ5. A. Nekhoroshikh, D. Efimov, A. Polyakov, W. Perruquetti, I. Furtat, Hyperexponential and fixed-time stability of time-delay systems: Lyapunov-Razumikhin method, **IEEE Transactions on Automatic Control**, 2022, (**IF**: 5.792)

IJ6. A. Nekhoroshikh, D. Efimov, E Fridman, W Perruquetti, I Furtat, A. Polyakov, Practical fixed-time ISS of neutral time-delay systems with application to stabilization by using delays, **Automatica**, 2022, (**IF**: 5.944)

IJ7. K. Zimenko, A. Polyakov, D. Efimov, Robust feedback stabilisation of homogeneous differential inclusions, **International Journal of Control** , 2022, 95 (1), 33-41(**IF**: 2.888)

IJ8. D. Cruz-Ortiz, M. Ballesteros, A. Polyakov, D. Efimov, I. Chairez and A. Poznyak, Practical Realization of Implicit Homogeneous Controllers for Linearized Systems, **IEEE Transactions on Industrial Electronics**, 2022, (**IF**: 8.162)

IJ9. S. Wang, A. Polyakov, G. Zheng, Quadrotor stabilization under time and space constraints using implicit PID controller, **Journal of The Franklin Institute**, 2022, 359 (4), 1505-1530. (**IF**: 4.504)

IJ10. A. dos Reis de Souza, D. Efimov, A. Polyakov, J.L. Gouzé, E. Cinquemani, State observation in microbial consortia: A case study on a synthetic produce-cleaner consortium, **International Journal of Robust and Nonlinear Control**, 2021, (in press) (**IF**: 3.897).

IJ11. A. Polyakov, Input-to-State Stability of homogeneous infinite dimensional systems with locally Lipschitz nonlinearities, **Automatica**, 2021, (**IF**: 5.944).

IJ12. S. Wang, A. Polyakov, G. Zheng, Generalized homogenization of linear observers: Theory and experiment, **International Journal of Robust and Nonlinear Control**, 2021, 31(16), 7971-7984, (**IF**: 3.897).

IJ13. M. Ballesteros, A. Polyakov, D. Efimov, I. Chairez, A. Poznyak, Non-parametric Identification of Homogeneous Dynamical Systems, **Automatica**, 2021, (**IF**: 5.944).

IJ14. Y. Braidiz, A. Polyakov, D. Efimov, W. Perruquetti, On finite/fixed-time stability analysis based on sup/sub-homogeneous extensions, **Systems & Control Letters**, 2021, (**IF**: 2.804).

IJ15. J. A. Mercado, J.A. Moreno, A. Polyakov, D. Efimov, MIMO Homogeneous Integral Control Design using the Implicit Lyapunov Function Approach, **Int. J. of Robust and Nonlinear Control**, 2021,(**IF**: 3.897).

IJ16. A. Polyakov, Homogeneous Lyapunov Functions for Homogeneous Infinite Dimensional Systems with Unbounded Nonlinear Operators, **Systems & Control Letters**, 2021, (**IF**: 2.804).

IJ17. S. Zhuk, O. V. Iftime, J. P. Epperlein, A. Polyakov, Minimax Sliding Mode Control Design for Linear Evolution Equations with Noisy Measurements and Uncertain Inputs, **Systems & Control Letters**, 2021, (**IF**: 2.804)

IJ18. B. Brogliato, A. Polyakov, Digital implementation of sliding-mode control via the implicit method: A tutorial, **International Journal of Robust and Nonlinear Control**, 2021, 31(9), 3528-3586(**IF**: 3.897).

IJ19. T. Sanchez, A. Polyakov, D. Efimov, Lyapunov-based Consistent Discretisation of Stable Homogeneous Systems, **International Journal of Robust and Nonlinear Control** , 2020, (**IF**: 3.897).

IJ20. S. Wang, A. Polyakov, G. Zheng, Generalized Homogenization of Linear Controllers: Theory and Experiment, **International Journal of Robust and Nonlinear Control** , 2020, (**IF**: 3.897).

IJ21. A. Tapia, D. Efimov, M. Bernal, A. Polyakov, L. Fridman, A polytopic strategy for improved non-asymptotic robust control via implicit Lyapunov functions, *Nonlinear Analysis: Hybrid Systems*, 2020.

IJ22. K. Zimenko, A. Polyakov, D. Efimov, W. Perruquetti, Robust Feedback Stabilization of Linear MIMO Systems Using Generalized Homogenization, **IEEE Transactions on Automatic Control**, 2020, (**IF**: 5.792).

IJ23. T. Sanchez, A. Polyakov, J.-P. Richard, A sliding mode controller for a model of flow separation in boundary layers, **International Journal of Robust and Nonlinear Control**, 2020, (**IF**: 3.897).

IJ24. Y. Braidiz, D. Efimov, A. Polyakov, W. Perruquetti, On robustness of finite-time stability of homogeneous affine nonlinear systems and cascade interconnections, **International Journal of Control**, 2020, (**IF**: 2.888).

IJ25. T. Sanchez, D. Efimov, A. Polyakov, Discrete-Time Homogeneity: Robustness and Approximation, **Automatica**, 2020, (**IF**: 5.944).

IJ26. V. Utkin, A. Poznyak, Y. Orlov, A. Polyakov, Conventional and High Order Sliding Mode Control, **Journal of The Franklin Institute**, 2020, (**IF**: 4.504).

IJ27. T. Kharkovskaya, D. Efimov, E. Fridman, A. Polyakov, J.-P. Richard, Interval observer design and control of uncertain non-homogeneous heat equations, **Automatica**, 2020, (**IF**: 5.944).

IJ28. A. dos Reis de Souza, D. Efimov, A. Polyakov, J.-L. Gouze, Robust Stabilization of Competing Species in the Chemostat, **Journal of Process Control**, 2020.

IJ29. B. Brogliato, A. Polyakov, D. Efimov, The implicit discretization of the super-twisting sliding-mode control algorithm, **IEEE Transactions on Automatic Control**, 2020, 65(8), 3707-3713, (**IF**: 5.792).

IJ30. F. Lopez-Ramirez, D. Efimov, A. Polyakov, W Perruquetti, Finite-time and fixed-time input-to-state stability: Explicit and implicit approaches, **Systems & Control Letters**, 2020, (**IF**: 2.267).

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