

# Jieqiang Wei

Department of Automatic Control  
School of Electrical Engineering  
KTH Royal Institute of Technology  
SE- 10044 Stockholm, Sweden

Phone: 46-728646734

email: [jieqiang@kth.se](mailto:jieqiang@kth.se)

Born: May 15, 1987—Shandong, China

## Work Experience

2016.3-present *Postdoctoral Researcher*, Department of Automatic Control, The Royal Institute of Technology (KTH), Stockholm, Sweden.

## Education

2004.9-2008.7 BSc in Mathematics, School of Mathematical Sciences, Qufu Normal University  
2008.9-2011.7 MSc in Mathematics, School of Mathematical Sciences, Beijing Normal University  
2011.9-2016.3 PhD in Mathematics, Department of Johann Bernoulli Institute of mathematics and computer sciences, University of Groningen.  
Promotor & Supervisor: Prof. A.J. van der Schaft  
2016.1-2016.3 VISTING STUDENT in ACCESS Linnaeus Centre, KTH Royal Institute of Technology, Sweden.  
Supervisors: Prof. Karl Henrik Johansson & Prof. Henrik Sandberg

## Publications

### JOURNAL ARTICLES

- 2013 **Jieqiang Wei** and Arjan van der Schaft, “Load balancing of dynamical distribution networks with flow constraints and unknown in/outflows”. *Systems & Control Letters*, volume 62, issue 11, pp.1001–1008.
- 2015 Ning Ding, **Jieqiang Wei** and M. Wolfensberger, “Using Epistemic Synchronization Index (ESI) to measure students’ knowledge elaboration process in CSCL”. *Computers & Education*, volume 80, pp.122-131.
- 2017 **Jieqiang Wei**, Anneroos Everts, Kanat Camlibel and Arjan van der Schaft, “Consensus problems with arbitrary sign-preserving nonlinearities”. *Automatica*. Volume 83, pp. 226-233
- 2017 **Jieqiang Wei**, Silun Zhang, Antonio Adaldo, Henrik Sandberg, Karl H. Johansson and Xiaoming Hu, “Finite-time attitude synchronization with discontinuous consensus protocols”. *IEEE Transactions on Automatic Control* accepted.
- 2018 **Jieqiang Wei**, Xinlei Yi, Henrik Sandberg and Karl Henrik Johansson, “Nonlinear consensus protocols with applications to quantized systems”. *IEEE Transactions on Control of Network Systems* Provisionally accepted.

#### UNDER REVIEW

1. **Jieqiang Wei**, Bart Besselink, Junfeng Wu, Henrik Sandberg and Karl H. Johansson, "Finite-time Convergence of Discontinuous Consensus Protocols". *Submitted to Automatica*.
2. Xinlei Yi, **Jieqiang Wei**, Dimos V. Dimarogonas and Karl H. Johansson, "Formation Control for Multi-Agent Systems with Connectivity Preservation and Event-Triggered Controllers". *Submitted to Automatica*.
3. Jianqi Chen, **Jieqiang Wei**, Wei Chen, Henrik Sandberg, Karl H. Johansson and Jie Chen, "Protecting Second-Order Positive Systems against Undetectable Attacks". *submitted*.
4. Han Zhang, **Jieqiang Wei**, Peng Yi and Xiaoming Hu, "Maximizing Algebraic Connectivity with Projected Dynamical Systems". *Submitted to Automatica*.
5. **Jieqiang Wei**, Alexander Johansson, Henrik Sandberg, Karl H. Johansson and Jie Chen, "Performance of symmetric systems: with application to networked control systems", submitted to IEEE Transactions on Automatic Control.
6. **Jieqiang Wei**, Christos Verginis, Junfeng Wu, Dimos V. Dimarogonas, Karl H. Johansson, "Almost global attitude tracking: geodesic-based approach", submitted to international journal of robust and nonlinear control.

#### IN PREPARATION

1. **Jieqiang Wei** and Arjan van der Schaft, "A graph-theoretic condition for the stability of dynamical distribution networks with flow constraints".

#### PEER REVIEWED CONFERENCE PROCEEDINGS

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| 2012 | Arjan J. van der Schaft and <b>Jieqiang Wei</b> , "A Hamiltonian Perspective on the Control of Dynamical Distribution Networks". In Proceedings of the 4th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control, Bertinoro, Italy, pp.24-29.               |
| 2013 | <b>Jieqiang Wei</b> and Arjan J. van der Schaft, "Stability of Dynamical Distribution Networks with Arbitrary Flow Constraints and Unknown In/outflows". In Proceedings of the 52nd IEEE Conference on Decision and Control, Florence, Italy, pp.55-60.                          |
| 2014 | <b>Jieqiang Wei</b> and Arjan J. van der Schaft, "A graphic condition for the stability of dynamical distribution networks with flow constraints". In Proceedings of the 21st International Symposium on Mathematical Theory of Networks and Systems, Groningen, The Netherland. |
| 2014 | <b>Jieqiang Wei</b> and Arjan J. van der Schaft, "Constrained proportional integral control of dynamical distribution networks with state constraints". In Proceedings of the 53rd IEEE Conference on Decision and Control, Los Angeles, California, USA, pp.6056-6061.          |
| 2016 | Xinlei Yi, <b>Jieqiang Wei</b> and Karl H. Johansson, "Self-Triggered Control for Multi-Agent Systems with Quantized Communication or Sensing". In Proceedings of the 55th IEEE Conference on Decision and Control, Las Vegas, NV, USA.  |
| 2017 | <b>Jieqiang Wei</b> , Silun Zhang, Antonio Adaldo, Xiaoming Hu and Karl H. Johansson, "Finite-time attitude synchronization with a discontinuous protocol". In Proceedings of the 13th IEEE International Conference on Control and Automation, Ohrid, Macedonia.                |
| 2017 | Xinlei Yi, <b>Jieqiang Wei</b> , Dimos Dimarogonas and Karl H. Johansson, "Formation Control for Multi-Agent Systems with Connectivity Preservation and Event-Triggered Controllers". In Proceedings of the 20th IFAC World congress, Toulouse, France.                          |
| 2017 | <b>Jieqiang Wei</b> , Xinlei Yi, Henrik Sandberg and Karl H. Johansson, "Nonlinear consensus protocols with applications to quantized systems". In Proceedings of the 20th IFAC World congress, Toulouse, France.  |
| 2017 | Jianqi Chen, <b>Jieqiang Wei</b> , Wei Chen, Henrik Sandberg, Karl H. Johansson and Jie Chen, "Protect-  |

- ing second-order positive systems against undetectable attacks”. In Proceedings of the 20th IFAC World congress, Toulouse, France.
- 2017 **Jieqiang Wei**, Junfeng Wu, Marco Molinari, Vladimir Cvetkovic, and Karl H. Johansson, “On the modeling of neural cognition for social network applications”, IEEE Conference on Control Technology and Applications, Khohala Coast, USA.
- 2018 Alexander Johansson, **Jieqiang Wei**<sup>1</sup>, Henrik Sandberg, Karl H. Johansson and Jie Chen, “Optimization of the  $\mathcal{H}_\infty$ -norm of Dynamic Flow Networks”, American Control Conference, Milwaukee, USA.
- 2018 **Jieqiang Wei**, Christos Verginis, Junfeng Wu, Dimos V. Dimarogonas, Henrik Sandberg and Karl H. Johansson, “Asymptotic and finite-time almost global attitude tracking: representations free approach”, the 17th European Control Conference, Limassol, Cyprus.
- 2018 Aneesh Raghavan, **Jieqiang Wei**, John S. Baras, Karl H. Johansson, “Stochastic Control Formulation of The Car Overtake Problem”, 15th IFAC Symposium on Control in Transportation Systems, Savona, Italy

## Teaching

- 2013-2015 Modeling & Control of Complex Nonlinear Engineering Systems. Tutorial teacher (sole-taught).

## Students

### MASTERS

Alexander Johansson, “Distributed PI Control in Multi-agent Systems: From Anti-Windup to Topology”, KTH, 2017.03.  
Rasmus Ringbäck, “Autonomous target tracking using distance based formations”, KTH, 2017.09.

## Academic services

### REVIEWER

IEEE Transactions on Automatic Control  
Automatica  
Systems & Control Letters  
IEEE Transactions on Control of Network Systems  
IEEE/CAA Journal of Automatica Sinica

### CONFERENCE COMMITTEE

- 2014 Reglermötet (Swedish control conference)

## Honors and Awards

- 2014 Received by the President Xi Jinping in Den Haag as an excellent student representative

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<sup>1</sup>\*: the corresponding author

## Research Visits

- 2017.12 Zhejiang University, College of Control Science and Engineering, Prof. Junfeng Wu.
- 2018.1 Chinese Academy of Sciences, Institute of Systems Science, Academy of Mathematics and Systems Science, Prof. Yiguang Hong.

## Extracurricular University Service

- 2012-2014 Director of The Association of Chinese Students and Scholars in the Netherlands

## Languages

English    fluent  
Dutch     can read with dictionary

## Skills and Qualifications

Programming Languages: C/C++, Matlab  
Markup Languages: LaTeX  
Programming Environments: MATLAB/Simulink  
Operating Systems: Linux, Windows

## References

[Prof. A.J. van der Schaft](#)

Johann Bernoulli Inst. for Math. and CompSc.  
University of Groningen  
[a.j.van.der.schaft@rug.nl](mailto:a.j.van.der.schaft@rug.nl)

[Prof. J.M.A. Scherpen](#)

DTPA-ENTEG  
University of Groningen  
[j.m.a.scherpen@rug.nl](mailto:j.m.a.scherpen@rug.nl)

[Prof. K. H. Johansson](#)

Department of Automatic Control  
KTH Royal Institute of Technology  
[kallej@kth.se](mailto:kallej@kth.se)

[Prof. H. Sandberg](#)

Department of Automatic Control  
KTH Royal Institute of Technology  
[hsan@kth.se](mailto:hsan@kth.se)