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Member of the Cyber-physical Mobility Group

Kontakt

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Forschung

Meine Forschung im Bereich Cyber-physical Mobility befindet sich in der interdisziplinären Schnittmenge von Software-Engineering, Regelungstechnik, mathematischer Optimierung und Kommunikationstechnik. Derzeit bearbeite ich das Projekt AutoKnigge, sowie den Aufbau des Cyber-physical Mobility Labors.

Abschlussarbeiten

Im Rahmen meiner Forschungstätigkeit ergeben sich kontinuierlich Themen für Abschlussarbeiten. Bei Interesse bitte ich um Kontaktaufnahme per E-Mail oder persönlich bei mir im Büro. Eigene Vorschläge sind ebenfalls möglich.

Offene Hiwistellen

Aktuelle Stellenausschreibungen können hier gefunden werden. Initiativbewerbungen sind ebenfalls

willkommen. Bewerbungen sollen folgende Unterlagen beinhalten: Notenspiegel, kurzer Lebenslauf und Zeugnisse.

Publikationen

[KA23]
PDFBIB

Kloock, M. M. and Alrifaee, B., "Coordinated Cooperative Distributed Decision-Making Using Synchronization of Local Plans", *IEEE Transactions on Intelligent Vehicles*, vol. 8, iss. 2, pp. 1292-1306, 2023

Coordinated Cooperative Distributed Decision-Making Using Synchronization of Local Plans

Bibtex entry :

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@article {  KA23,
    author = { Kloock, Maximilian Martin and Alrifaee, Bassam },
    title = { Coordinated Cooperative Distributed Decision-Making Using
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    journal = { IEEE Transactions on Intelligent Vehicles },
    publisher = { IEEE },
    pages = { 1292-1306 },
    volume = { 8 },
    number = { 2 },
    year = { 2023 },
    address = { New York, NY },
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    url = { http://publications.rwth-aachen.de/record/862885 },
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[KA23a]
PDFBIB

Kloock, M. M. and Alrifaee, B., "Cooperative Pose Control of Non-Holonomic Vehicles Using Synchronization", in *Proc. 2023 IEEE 26th International Conference on Intelligent Transportation Systems (ITSC) : [Proceedings]*, 2023, IEEE.

Cooperative Pose Control of Non-Holonomic Vehicles Using Synchronization

Bibtex entry :

```
@inproceedings {  KA23a,
    author = { Kloock, Maximilian Martin and Alrifaee, Bassam },
    title = { Cooperative Pose Control of Non-Holonomic Vehicles Using
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Intelligent
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    doi = { 10.1109/ITSC57777.2023.10422078 },
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    url = {
http://publications.rwth-aachen.de/record/980098/files/980098.pdf },
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Bewertung
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```

[Klo23]
PDFBIB

Kloock, M. M., "Synchronization-based cooperative trajectory planning of networked vehicles", PhD Thesis, Aachen, 2023.

Synchronization-based cooperative trajectory planning of networked vehicles

Bibtex entry :

```
@phdthesis {  Klo23,
    author = { Kloock, Maximilian Martin },
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    pages = { 1 Online-Ressource : Illustrationen, Diagramme },
    series = { Aachener Informatik-Berichte (AIB) },
    year = { 2023 },
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[KSA23]
PDFBIB

Kloock, M. M., Scheffe, P., and Alrifaee, B., "Testing distributed trajectory planning in the cyber-physical mobility lab", *Automatisierungstechnik*, vol. 71, iss. 4, pp. 317-325, 2023

Testing distributed trajectory planning in the cyber-physical mobility lab

Bibtex entry :

```
@article {  KSA23,
    author = { Kloock, Maximilian Martin and Scheffe, Patrick and
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[KSG+23]
PDFBIB

Kloock, M. M., Scheffe, P., Gress, O., and Alrifaee, B., "An Architecture for Experiments in Connected and Automated Vehicles", *IEEE open journal of intelligent transportation systems*, vol. 4, pp. 175-186, 2023

An Architecture for Experiments in Connected and Automated Vehicles

Bibtex entry :

```
@article {  KSG+23,
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Gress,
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http://publications.rwth-aachen.de/record/952957/files/952957.pdf },
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[SHK+23]
PDFBIB

Scheffe, P., Henneken, T. M., Kloock, M. M., and Alrifaee, B., "Sequential Convex Programming Methods for Real-time Optimal Trajectory Planning in Autonomous Vehicle Racing", *IEEE Transactions on Intelligent Vehicles : T-IV*, vol. 8, iss. 1, pp. 661-672, 2023

Sequential Convex Programming Methods for Real-time Optimal Trajectory Planning in Autonomous Vehicle Racing

Bibtex entry :

```
@article {  SHK+23,
    author = { Scheffe, Patrick and Henneken, Theodor Mario and Kloock,
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[KDK+22]
PDFBIB

Kloock, M. M., Dirksen, M., Kowalewski, S., and Alrifaee, B., "Generation of Coupling Topologies for Multi-Agent Systems using Non-Cooperative Games", in *Proc. 2022 IEEE Intelligent Vehicles Symposium (IV) : 4-9 June 2022 / publisher: IEEE*, Piscataway, NJ, 2022, IEEE, pp. 1-8.

Generation of Coupling Topologies for Multi-Agent Systems using Non-Cooperative Games

Bibtex entry :

```
@inproceedings {  KDK+22,
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    publisher = { IEEE },
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http://publications.rwth-aachen.de/record/852149/files/852149.pdf },
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[KHK+21]
PDFBIB

Kloock, M. M., He, Q., Kowalewski, S., and Alrifaee, B., "Trajectory Verification for Networked and Autonomous Vehicles using Temporal Logic and Model Checking", in *Proc. 2021 IEEE International Intelligent Transportation Systems Conference (ITSC) : 19-22 Sept. 2021 / publisher: IEEE*, [Piscataway, NJ], 2021, IEEE, pp. 244-250.

Trajectory Verification for Networked and Autonomous Vehicles using Temporal Logic and Model Checking

Bibtex entry :

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@inproceedings {  KHK+21,
    author = { Kloock, Maximilian Martin and He, Qingyun and
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Systems
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    pages = { 244-250 },
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http://publications.rwth-aachen.de/record/834750/files/834750.pdf },
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[KSM+21]
PDFBIB

Kloock, M. M., Scheffe, P., Maczijewski, J., Kampmann, A., Mokhtarian, A., Kowalewski, S., and Alrifaee, B., "Cyber-Physical Mobility Lab : An Open-Source Platform for Networked and Autonomous Vehicles", in *Proc. 2021 European Control Conference (ECC)*, [Piscataway, NJ], 2021, IEEE, pp. 1937-1944.

Cyber-Physical Mobility Lab : An Open-Source Platform for Networked and Autonomous Vehicles

Bibtex entry :

```
@inproceedings {  KSM+21,
    author = { Kloock, Maximilian Martin and Scheffe, Patrick and
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[KST+20]
PDFBIB

Kloock, M. M., Scheffe, P., Tülleners, I., Maczijewski, J., Kowalewski, S., and Alrifaee, B., "Vision-Based Real-Time Indoor Positioning System for Multiple Vehicles", *IFAC-PapersOnLine*, vol. 53, iss. 2, pp. 15446-15453, 2020

Vision-Based Real-Time Indoor Positioning System for Multiple Vehicles

Bibtex entry :

```
@article {  KST+20,
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http://publications.rwth-aachen.de/record/817298/files/817298.pdf },
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[SMK+20]
PDFBIB

Scheffe, P., Maczijewski, J., Kloock, M. M., Kampmann, A., Derks, A., Kowalewski, S., and Alrifaee, B., "Networked and Autonomous Model-scale Vehicles for Experiments in Research and Education", *IFAC-PapersOnLine*, vol. 53, iss. 2, pp. 17332-17337, 2020

Networked and Autonomous Model-scale Vehicles for Experiments in Research and Education

Bibtex entry :

```
@article {  SMK+20,
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    volume = { 53 },
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http://publications.rwth-aachen.de/record/817552/files/817552.pdf },
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```

[KKM+19]
PDFBIB

Kloock, M. M., Kragl, L., Maczijewski, J., Alrifaee, B., and Kowalewski, S., "Distributed Model Predictive Pose Control of Multiple Nonholonomic Vehicles", in *Proc. IV19 : 30th IEEE Intelligent Vehicles Symposium : 9-12 June 2019, Paris / publisher: IEEE*, Piscataway, NJ, 2019, IEEE, pp. 1620-1625.

Distributed Model Predictive Pose Control of Multiple Nonholonomic Vehicles

Bibtex entry :

```
@inproceedings {  KKM+19,
    author = { Kloock, Maximilian Martin and Kragl, Ludwig and
Maczijewski,
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9-12 June
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        2019, Paris / publisher: IEEE },
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    reportid = { RWTH-2019-08197 },
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[KSB+19]
PDFBIB

Kloock, M. M., Scheffe, P., Botz, L., Maczijewski, J., Alrifaee, B., and Kowalewski, S., "Networked Model Predictive Vehicle Race Control", in *Proc. The 2019 IEEE Intelligent Transportation Systems Conference - ITSC : Auckland, New Zealand, 27-30 October 2019 / IEEE, IEEE-ITSC 2019, ITSS - IEEE Intelligent Transportation Systems Society*, Piscataway, NJ, 2019, IEEE, pp. 1552-1557.

Networked Model Predictive Vehicle Race Control

Bibtex entry :

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@inproceedings {  KSB+19,
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        IEEE-ITSC 2019, ITSS - IEEE Intelligent Transportation
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    publisher = { IEEE },
    pages = { 1552-1557 },
    year = { 2019 },
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Conference,
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[KSM+19]
PDFBIB

Kloock, M. M., Scheffe, P., Marquardt, S., Maczijewski, J., Alrifaee, B., and Kowalewski, S., "Distributed Model Predictive Intersection Control of Multiple Vehicles", in *Proc. The 2019 IEEE Intelligent Transportation Systems Conference - ITSC : Auckland, New Zealand, 27-30 October 2019 / IEEE, IEEE-ITSC 2019, ITSS - IEEE Intelligent Transportation Systems Society*, Piscataway, NJ, 2019, IEEE, p. 8917117, 1735-1740.

Distributed Model Predictive Intersection Control of Multiple Vehicles

Bibtex entry :

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@inproceedings {  KSM+19,
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[VKR+19]
PDFBIB

Völker, M., Kloock, M. M., Rabanus, L., Alrifaee, B., and Kowalewski, S., "Verification of Cooperative Vehicle Behavior using Temporal Logic", *IFAC-PapersOnLine*, vol. 52, iss. 8, pp. 99-104, 2019

Verification of Cooperative Vehicle Behavior using Temporal Logic

Bibtex entry :

```
@article {  VKR+19,
    author = { V{\"o}lker, Marcus and Kloock, Maximilian Martin and
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Vehicles,
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