Dr. Ing. Ibtissem Ben Makhlouf

Kontakt

ehemalige Wissenschaftliche Mitarbeiterin

Interessen

- Erreichbarkeitsanalyse hybrider Systeme

Projekte

- Sicherheitsanalyse und Regelung von Fahrzeugkolonnen

Veröffentlichungen

[BHK17]


**HyReach: A Reachability Tool for Linear Hybrid Systems Based on Support Functions**

Bibtex entry :

```bibtex
@inproceedings { BHK17,
    author = { Ben Makhlouf, Ibtissem and Hansen, Norman and Kowalewski, Stefan },
    title = { HyReach: A Reachability Tool for Linear Hybrid Systems Based on Support Functions },
    booktitle = { ARCH16. 3rd International Workshop on Applied Verification for Continuous and Hybrid Systems / Editors: Goran Frehse and Matthias Althoff },
} `

**HyPro: A C++ Library of State Set Representations for Hybrid Systems Reachability Analysis**

**Bibtex entry:**

```latex
@inbook { SAB+17,  
    author = { Schupp, Stefan and Ábrahám, Erika and Ben Makhlouf, Ibtissem and Kowalewski, Stefan },  
    title = { HyPro: A C++ Library of State Set Representations for Hybrid Systems Reachability Analysis },  
    booktitle = { NASA formal methods : 9th international symposium, NFM 2017, Moffett Field, CA, USA, May 16-18, 2017 : proceedings / Clark Barrett, Misty Davies, Temesghen Kahsai (eds.) },  
    publisher = { Springer },  
    pages = { 288-294 },  
    volume = { 10227 },  
    series = { Lecture Notes in Computer Science },  
    year = { 2017 },  
    address = { Cham },  
    organization = { NASA Formal Methods (NFM) Symposium, Moffett Field, CA (USA), 2017-05-16 - 2017-05-18 },  
    doi = { 10.1007/978-3-319-57288-8_20 },  
    typ = { PUB:(DE-HGF)7 },  
    reportid = { RWTH-2017-06600 },  
    cin = { 123420 / 120000 / 122810 / 080060 },  
    url = { http://publications.rwth-aachen.de/record/696076 },  
} 
```
Comparative evaluation and improvement of computational approaches to reachability analysis of linear hybrid systems

Bibtex entry:

@phdthesis { Ben16,  
  author = { Ben Makhlouf, Ibtissem },  
  othercontributors = { Kowalewski, Stefan and Frehse, Goran },  
  title = { Comparative evaluation and improvement of computational 
              approaches to reachability analysis of linear hybrid systems },  
  publisher = { Shaker Verlag },  
  school = { RWTH Aachen },  
  pages = { viii, 221 Seiten : Illustrationen, Diagramme },  
  series = { Aachener Informatik-Berichte },  
  year = { 2016 },  
  address = { Aachen },  
  isbn = { 978-3-8440-4376-1 },  
  typ = { PUB:(DE-HGF)3 },  
  reportid = { RWTH-2016-02174 },  
  cin = { 122810 / 120000 },  
  url = { http://publications.rwth-aachen.de/record/571624/files/571624.pdf },  
}

A Study on Solving Guard and Invariant Set Intersection in Zonotope-based Reachability of Linear Hybrid Systems

Bibtex entry:

@article { BGK15,  
  author = { Ben Makhlouf, Ibtissem and Gan, Jonathan and Kowalewski, Stefan },  
  title = { A Study on Solving Guard and Invariant Set Intersection in 
              Zonotope-based Reachability of Linear Hybrid Systems },  
  journal = { IFAC-PapersOnLine },  
  volume = { 48 },  
  number = { 27 },  
  pages = { 13-20 },  
  year = { 2015 }  
}

**Networked Cooperative Platoon of Vehicles for Testing Methods and Verification Tools**

**Bibtex entry:**

```bibtex
@inbook {BK15,
  author = {Ben Makhlouf, Ibtissem and Kowalewski, Stefan},
  title = {Networked Cooperative Platoon of Vehicles for Testing Methods and Verification Tools},
  booktitle = {[ARCH14-15. 1st and 2nd International Workshop on Applied veRification for Continuous and Hybrid Systems / Goran Frehse and Matthias Althoff (editors)]},
  publisher = {EasyChair},
  pages = {37-42},
  volume = {34},
  series = {EPiC Series in Computer Science},
  year = {2015},
  organization = {1st and 2nd International Workshop on Applied veRification for Continuous and Hybrid Systems},
  typ = {PUB:(DE-HGF)8},
  reportid = {RWTH-CONV-207903},
  cin = {122810 / 120000},
}
```
Optimizing Safe Control of a Networked Platoon of Trucks Using Reachability

Bibtex entry:

@inbook { BK15a,
    author = { Ben Makhlouf, Ibtissem and Kowalewski, Stefan },
    title = { Optimizing Safe Control of a Networked Platoon of Trucks Using Reachability },
    booktitle = { [ARCH14-15. 1st and 2nd International Workshop on Applied veRification for Continuous and Hybrid Systems / Goran Frehse and Matthias Althoff (editors)] },
    publisher = { EasyChair },
    pages = { 169-179 },
    volume = { 34 },
    series = { EPiC Series in Computing },
    year = { 2015 },
    organization = { 1st and 2nd International Workshop on Applied veRification for Continuous and Hybrid Systems },
    typ = { PUB:(DE-HGF)8 },
    reportid = { RWTH-CONV-207910 },
    cin = { 122810 / 120000 },
}

A Benchmark Suite for Hybrid Systems Reachability Analysis

Bibtex entry:

@inbook { CSB+15,
    author = { Chen, Xin and Schupp, Stefan and Ben Makhlouf, Ibtissem and Ábrahám, E., Frehse, G., and Kowalewski, S. },
    title = { A Benchmark Suite for Hybrid Systems Reachability Analysis },
    booktitle = { Cham: Springer, 2015, vol. 9058, pp. 408-414 },

Ábrahám, Erika and Frehse, Goran and Kowalewski, Stefan },
title = { A Benchmark Suite for Hybrid Systems Reachability Analysis },
booktitle = { NASA Formal Methods ; 7th International Symposium, NFM 2015,
Pasadena, Calif., USA, April 27-29, 2015, Proceedings /
edited by Klaus Havelund, Gerard Holzmann, Rajeev Joshi },
publisher = { Springer },
pages = { 408-414 },
volume = { 9058 },
series = { Lecture Notes in Computer Science },
year = { 2015 },
address = { Cham },
organization = { 7th International Symposium Formal Methods,
Pasadena, Calif. (Germany), 2015-04-27 - 2015-04-29 },
doi = { 10.1007/978-3-319-17524-9_29 },
typ = { PUB:(DE-HGF)8 },
reportid = { RWTH-CONV-207695 },
cin = { 123420 / 120000 / 122810 },
url = { http://publications.rwth-aachen.de/record/541100 },

[SAC+15]

Schupp, S., Ábrahám, E., Chen, X., Ben Makhlouf, I., Frehse, G., Sankaranarayanan, S., and
Kowalewski, S., "Current Challenges in the Verification of Hybrid Systems", in Proc. Cyber
physical systems : design, modeling, and evaluation ; 5th international workshop, CyPhy 2015,
Amsterdam, The Netherlands, October 8, 2015 ; proceedings / Christian Berger ... (eds.), Cham,

Current Challenges in the Verification of Hybrid Systems

Bibtex entry :

@inproceedings { SAC+15,
    author = { Schupp, Stefan and Ábrahám, Erika and Chen, Xin and Ben
Makhlouf, Ibtissem and Frehse, Goran and Sankaranarayanan,
Sriram and Kowalewski, Stefan },
    title = { Current Challenges in the Verification of Hybrid Systems },
    booktitle = { Cyber physical systems : design, modeling, and
evaluation ; 5th international workshop, CyPhy 2015, Amsterdam, The
Netherlands, October 8, 2015 ; proceedings / Christian
Berger ... (eds.) },
    publisher = { Springer International Publishing },
    pages = { 8-24 },
    series = { Lecture Notes in Computer Science },
    year = { 2015 },
}

**Networked Cooperative Platoon of Vehicles for Testing Methods and Verification Tools**

Bibtex entry :

```latex
@inproceedings { BK14,
  author = { Ben Makhlouf, Ibtissem and Kowalewski, Stefan },
  title = { Networked Cooperative Platoon of Vehicles for Testing Methods and Verification Tools },
  booktitle = { ARCH14 CPSWeek 2014 : Berlin, Germany, April 14 - 17, 2014 },
  pages = { 6 Seiten },
  year = { 2014 },
  address = { [s.l.] },
  typ = { PUB:(DE-HGF)8 },
  reportid = { RWTH-CONV-205606 },
  cin = { 120000 / 122810 },
  url = { http://cps-vo.org/node/12115 },
}
```


**Reachability Analysis for Managing Platoons at**
Intersections

Bibtex entry:

@inproceedings { BDK13,
   author = { Ben Makhlouf, Ibtissem and Diab, Hilal and Kowalewski, Stefan },
   title = { Reachability Analysis for Managing Platoons at Intersections },
   publisher = { IEEE },
   pages = { 1141-1147 },
   year = { 2013 },
   address = { Piscataway, NJ },
   doi = { 10.1109/MED.2013.6608864 },
   typ = { PUB:(DE-HGF)8 },
   reportid = { RWTH-CONV-204343 },
   cin = { 120000 / 122810 },
   url = { http://publications.rwth-aachen.de/record/226951 },
}

[BDK13]

PDFBIB


Comparison of Reachability Methods for Uncertain Linear Time-Invariant Systems

Bibtex entry:

@inproceedings { BHK13,
   author = { Ben Makhlouf, Ibtissem and H"{a}nsch, Paul and Kowalewski, Stefan },
   title = { Comparison of Reachability Methods for Uncertain Linear Time-Invariant Systems },
   booktitle = { Proceedings of the 12th European Control Conference (ECC) : July 17 -19, 2013, Zuerich, Switzerland },
   publisher = { Omnipress },


**Reachability Analysis of Linear Systems with Stepwise Constant Inputs**

Bibtex entry:

```latex
@article { HDB+13,
    author = { Hänsch, Paul and Diab, Hilal and Ben Makhlouf, Ibtissem and Kowalewski, Stefan },
    title = { Reachability Analysis of Linear Systems with Stepwise Constant Inputs },
    journal = { Electronic notes in theoretical computer science: ENTCS },
    publisher = { Elsevier },
    pages = { 61-74 },
    volume = { 297 },
    year = { 2013 },
    address = { Amsterdam },
    issn = { 1571-0661 },
    doi = { 10.1016/j.entcs.2013.12.005 },
    typ = { PUB:(DE-HGF)16 },
    reportid = { RWTH-CONV-088053 },
    cin = { 120000 / 122810 },
    url = { http://publications.rwth-aachen.de/record/445077 },
}
```


[BDK12] PDF BIB
Safety Verification of a Controlled Cooperative Platoon Under Loss of Communication Using Zonotopes

Bibtex entry :

@inproceedings{DBK12,
  author = { Ben Makhlouf, Ibtissem and Diab, Hilal and Kowalewski, Stefan },
  title = { Safety Verification of a Controlled Cooperative Platoon Under Loss of Communication Using Zonotopes },
  booktitle = { Inproceeding of the 4th IFAC Conference on Analysis and Design of Hybrid Systems (ADHS 12), Eindhoven, NL },
  pages = { 333-338 },
  year = { 2012 },
  doi = { 10.3182/20120606-3-NL-3011.00053 },
  typ = { PUB:(DE-HGF)8 },
  reportid = { RWTH-CONV-200116 },
  cin = { 122810 / 120000 },
  url = { http://publications.rwth-aachen.de/record/197942 },
}

A Platoon of Vehicles Approaching an Intersection: A Testing Platform for Safe Intersections

Bibtex entry :

@inproceedings{DBK12,
  author = { Diab, Hilal and Ben Makhlouf, Ibtissem and Kowalewski, Stefan },
  title = { A Platoon of Vehicles Approaching an Intersection: A Testing Platform for Safe Intersections },
}
Safety Verification of a Cooperative Vehicle Platoon with Uncertain Inputs Using Zonotopes

Bibtex entry :

@inproceedings { BMH+11,  
   author = { Ben Makhlouf, Ibtissem and Maschuw, Jan P. and Hänsch, Paul and Diab, Hilal and Kowalewski, Stefan and Abel, Dirk },  
   title = { Safety Verification of a Cooperative Vehicle Platoon with Uncertain Inputs Using Zonotopes },  
   booktitle = { Proceedings of the 18th IFAC World Congress, 2011 : August 28 - September 2, 2011, Università Cattolica del Sacro Cuore, Milano Italy / Ed.: Sergio Bittanti ... },  
   publisher = { Curran },  
   year = { 2011 },  
   address = { Milano, Italy },  
   doi = { 10.3182/20110828-6-IT-1002.02165 },  
   typ = { PUB:(DE-HGF)8 },  
   reportid = { RWTH-CONV-173769 },  
   cin = { 120000 / 122810 },  
   url = { http://publications.rwth-aachen.de/record/100991 },  
}

[BMH+11]
PDBIB


On the Effects of Network Delays on an Energy-based
Controller

Bibtex entry:

@techreport { CBD+10,
  author = { Chávez Grunewald, Martin Guillermo and Ben Makhlouf, Ibtissem and Diab, Hilal and Abel, Dirk and Kowalewski, Stefan },
  title = { On the Effects of Network Delays on an Energy-based Controller },
  booktitle = { NecSys'10 : 2nd IFAC Workshop on Distributed Estimation and Control in Networked Systems ; 13-14 September, 2010, Centre de Congrès de L'Impérial Palace, Annecy, France },
  pages = { 169-174 },
  number = { TuPO11.1 },
  year = { 2010 },
  typ = { PUB:(DE-HGF)8 },
  reportid = { RWTH-CONV-009571 },
  url = { http://publications.rwth-aachen.de/record/118448 },
}

[CBD+10a]


Regelung und Sicherheitsanalyse einer Gruppe Massenpunktfahrzeuge mit Hilfe energiebasierter Methoden

Bibtex entry:

@inproceedings { CBD+10a,
  author = { Chávez Grunewald, Martin Guillermo and Ben Makhlouf, Ibtissem and Diab, Hilal and Mut, Vicente and Kowalewski, Stefan and Abel, Dirk },
  title = { Regelung und Sicherheitsanalyse einer Gruppe Massenpunktfahrzeuge mit Hilfe energiebasierter Methoden },
  booktitle = { Automatisierungstechnik : at },
  publisher = { Oldenbourg },
  pages = { 227-235 },
  volume = { 58 },
  number = { 4 },
  year = { 2010 },
  address = { München },


A testing platform for cooperative vehicle platoon controllers

Bibtex entry:

```bibtex
@inproceedings { DCB+10,
    author = { Diab, Hilal and Chávez Grunewald, Martin Guillermo and Ben Makhlouf, Ibtissem and Abel, Dirk and Kowalewski, Stefan },
    title = { A testing platform for cooperative vehicle platoon controllers },
    publisher = { IEEE },
    pages = { 1718-1723 },
    year = { 2010 },
    address = { Piscataway, NJ },
    doi = { 10.1109/ITSC.2010.5625258 },
    typ = { PUB:(DE-HGF)8 },
    reportid = { RWTH-CONV-189667 },
    cin = { 122810 / 416610 / 120000 },
    url = { http://publications.rwth-aachen.de/record/118439 },
}
```

Ben Makhlouf, I., Kowalewski, S., Chávez Grunewald, M. G., and Abel, D., "Safety assessment of networked vehicle platoon controllers : practical experiences with available tools", in Proc. ADHS'09: 3rd IFAC Conference on Analysis and Design of Hybrid : September 16, 17 - 18, University of Zaragoza, Spain / Aragón Institute for Engineering Research, Zaragoza, Spain, 2009, University of Zaragoza.
Safety assessment of networked vehicle platoon controllers: practical experiences with available tools

Bibtex entry:

@inproceedings { BKC+09,
author = { Ben Makhlouf, Ibtissem and Kowalewski, Stefan and Chávez Grunwald, Martin Guilleremo and Abel, Dirk },
title = { Safety assessment of networked vehicle platoon controllers: practical experiences with available tools },
booktitle = { ADHS'09: 3rd IFAC Conference on Analysis and Design of Hybrid: September 16, 17 - 18, University of Zaragoza, Spain / Aragón Institute for Engineering Research },
publisher = { University of Zaragoza },
year = { 2009 },
address = { Zaragoza, Spain },
typ = { PUB:(DE-HGF)8 },
reportid = { RWTH-CONV-172519 },
cin = { 122810 / 416610 / 120000 },
url = { http://publications.rwth-aachen.de/record/99560 },
}

[DBK+09]
PDFBIB


Control and Safety Analysis of a Platoon under Communication Constraints

Bibtex entry:

@inproceedings { DBK+09,
author = { Diab, Hilal and Ben Makhlouf, Ibtissem and Kowalewski, Stefan and Chávez, Martin and Abel, Dirk },
title = { Control and Safety Analysis of a Platoon under Communication Constraints },
booktitle = { NE\[S/T\]COC, Sept. 28/29, Stuttgart, Priority Program 1305 Posters S.5 },
pages = { 70-71 },
year = { 2009 },
typ = { PUB:(DE-HGF)8 },
reportid = { RWTH-CONV-173123 },
cin = { 416610 / 122810 },
}

An evaluation of two recent reachability analysis tools for hybrid systems

Bibtex entry:

```latex
@inproceedings { BK06,
    author = { Ben Makhlouf, Ibtissem and Kowalewski, Stefan },
    title = { An evaluation of two recent reachability analysis tools for hybrid systems },
    booktitle = { Preprints / ADHS '06, 2nd IFAC Conference on Analysis and Design of Hybrid Systems : Alghero, Italy, June 7 - 9, 2006 / IFAC, International Federation of Automatic Control; DIEE, Dipartimento di Ingegneria Elettrica ed Elettronica, Università di Cagliari. Ed.: C. G. Cassandras ... },
    pages = { 377-382 },
    year = { 2006 },
    address = { Alghero },
    typ = { PUB:(DE-HGF)8 },
    reportid = { RWTH-CONV-188518 },
    cin = { 122810 / 120000 },
    url = { http://www.ifac-papersonline.net/cgi-bin/links/page.cgi?g=Detailed/30190.html;d=1 }
}
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