

Extended Curriculum Vitae

Florian Rabe

Contents

1	General Information	1
1.1	Personal	1
1.2	Education and Employment	2
1.3	Major Invited Research Visits	2
1.4	Awards and Scholarships	3
2	Academic Activities	3
2.1	Funded Research Projects	3
2.2	Teaching	3
2.3	Advising of Students	5
3	Academic Service	6
3.1	Academic Self-Governance	6
3.2	Organization of Meetings	7
3.3	Peer Review	8
3.4	Invited Talks	10
4	Major Software Projects	10
5	Publications	11
5.1	Articles in Journals	11
5.2	Refereed Articles in Major Collections	13
5.3	Refereed Articles in Other Collections	17
5.4	Invited Articles in Collections	18
5.5	Theses	18
5.6	Edited Collections	18
5.7	Reviews	19
5.8	Other Research Publications (most of them lightly refereed)	19
5.9	Textbook-Style Lecture Notes	22
5.10	Selected Service Documents	22

1 General Information

1.1 Personal

Name PD¹ Dr. habil. FLORIAN RABE
Born 28.09.1979, Wolfsburg, Germany
Nationality German
Affiliation primary: University Erlangen-Nürnberg, Computer Science, Germany
secondary: Amazon Web Services, Automated Reasoning Group

¹PD abbreviates “Privatdozent”, a German title that entails the right to teach independently and supervise Ph.D.

1.2 Education and Employment

2021– Amazon Visiting Academic, Automated Reasoning Group (20% position)
2019–2020 Consultant for Amazon Web Services
2018–2019 Senior researcher, University Paris-Sud, France
2017– Senior researcher (Akad. OR, 100% position), University Erlangen-Nürnberg; Privatdozent since 2019
2017 Substitute professor (Professorenvertretung), Jacobs University, Bremen, Germany
2015–2018 Privatdozent and faculty member, Jacobs University
2014–2017 Self-acquired third-party funded position (DFG Eigene Stelle): Jacobs University
2008–2014 Habilitation (venia legendi), Computer Science, Jacobs University
Thesis: “A Scalable Logical Framework”, Talk: “Process Calculi”
2005–2008 Ph.D. with distinction, Computer Science, Jacobs University
2000–2004 M.Sc. with distinction, Computer Science, University of Karlsruhe, Germany
1999 Abitur, 1.0 (best possible GPA)

1.3 Major Invited Research Visits

Feb 2020 Hausdorff Center for Mathematics, Bonn, Germany
Workshop on Mathematical Language and Practical Type Theory
May 2019 International Center for Mathematical Sciences, Edinburgh, UK
Workshop on Big Proof
Aug 2018 McMaster University, Hamilton, Ontario, Canada
invited by Prof. William Farmer
Dec 2017 LRI, Paris, France
Invited by Prof. Nicolas Thiéry
Nov 2017 WIAS, Berlin, Germany
Invited by Dr. Thomas Koprucki
Sep 2016 ENSIIE, Paris, France
Invited by Prof. Catherine Dubois and Prof. Renaud Rioboo
Jan 2016 University of Innsbruck, Austria
Invited by Prof. Cezary Kaliszyk
March+April 2015 SRI International, Menlo Park, California, US (1 month)
Collaboration with Dr. Natarajan Shankar
and Kestrel Institute, Palo Alto, California, US (1 month)
Collaboration with Dr. Stephen Westfold
Sep 2014 Chalmers University of Technology, Gothenburg, Sweden
Invited by Dr. Cezar Ionescu
Feb 2014 University of Innsbruck, Austria
Invited by Prof. Cezary Kaliszyk
June 2013 University of Zürich, Switzerland
Invited by Prof. Paul-Olivier Dehaye
Jan 2011 McMaster University, Hamilton, Ontario, Canada
Collaboration with Prof. William M. Farmer and Prof. Jacques Carette
June 2010 IT University of Copenhagen, Denmark
Invited by Prof. Carsten Schürmann
Jan 2009 IT University of Copenhagen, Denmark
Invited by Prof. Carsten Schürmann

students at a German university.

Jan-Dec 2006 Carnegie Mellon University, Pittsburgh, USA
Invited by Prof. Frank Pfenning

1.4 Awards and Scholarships

2021 Winner “Best system paper”, Conference on Intelligent Computer Mathematics
2019 Winner “Best paper”, Conference on Intelligent Computer Mathematics
2015 Winner of the Contest “The Future of Logic” at the Universal Logic Congress (500 €)
2010 Winner “Best paper”, Conference on Mathematical Knowledge Management
2007–2008 Full scholarship by German Merit Foundation (17 months)
2006 Winner “Modal Logic \$100 challenge”
2006 Full scholarship by German Academic Exchange Service (12 months)
 (for research stay at Carnegie Mellon University, Pittsburgh, USA)
2005 Full scholarship by Jacobs University Germany (8 months)
2005–2014 ~ 10 individual travel grants to conferences
2005 Award by Förderverein of the Research Center Computer Science (500 €)
 Best Diploma thesis

2 Academic Activities

2.1 Funded Research Projects

LATIN: Logic Atlas & Integrator

2009–2012, 2 positions, funded by German Research Foundation (DFG)
de facto principal investigator, with Prof. M. Kohlhase, Prof. T. Mossakowski
<http://uniformal.github.io/doc/applications/LATIN/>

OAF: Open Archive of Formal Knowledge

2014–2020, 2 positions, funded by German Research Foundation (DFG)
principal investigator, with Prof. M. Kohlhase
<https://kwarc.info/projects/oaf>

OpenDreamKit: Open Digital Research Environment Toolkit for the Advancement of Mathematics

2015–2019, 7,630,000 € funded, by EU Horizon 2020, RIA
principal investigator, part of consortium of 15 sites
<http://opendreamkit.org/>

2.2 Teaching

Since receiving my PhD in 2008, I have taught independently. My teaching experience includes in particular

- undergraduate level
 - Formal languages, automata, and logic
 - Data structures and algorithms
 - Security
 - Programming languages
- graduate level
 - Formal systems and semantics
 - Artificial Intelligence
 - Knowledge Representation

Concretely, I have taught the following courses:

Semester	Type	ECTS	Title
<i>at Jacobs University</i>			
Fall 2008	undergraduate course	5	Formal Languages and Logic
Spring 2009	graduate seminar+project	5+10	Semantic Web and Knowledge Representation
Fall 2009	graduate course+lab	5+5	Computational Logic
Fall 2009	reading course	5	Universal Algebra
Spring 2010	graduate seminar+project	5+10	Semantic Web and Knowledge Representation
Spring 2010	reading course	10	Type Theory
Fall 2010	graduate course+lab	5+5	Computational Semantics of Natural Language
Spring 2011	graduate seminar+project	5+10	Semantic Web and Knowledge Representation
Fall 2011	graduate course+lab	5+5	Computational Logic
Spring 2012	graduate seminar+project	5+10	Semantic Web and Knowledge Representation
Fall 2012	undergraduate lab	2.5	Programming in Python
Fall 2012	undergraduate lab	2×2.5	Programming in C
Spring 2013	undergraduate lab	2.5	Programming in Python 2
Fall 2013	reading course	2.5	Programming in Python 2
Fall 2013	undergraduate course	5	Formal Languages and Logic
Fall 2013	graduate lab+project	5+10	Computational Logic
Fall 2014	graduate lab+project	5+10	Computational Logic
Spring 2016	undergraduate lab	2×2.5	Advanced Programming in Python
Spring 2017	undergraduate course	5	Algorithms and Data Structures
Spring 2017	undergraduate course	5	Secure and Dependable Systems
Spring 2017	undergraduate lab	2×2.5	Advanced Programming in Python
<i>at University Erlangen-Nuremberg</i>			
Winter 2019/20	seminar	5	Knowledge Representation and Processing
Summer 2020	seminar	5	Knowledge Representation and Processing
Summer 2020	course	5	Logic-based knowledge representation for mathematical/technical knowledge
Summer 2020	course+lab	7.5	Knowledge Representation and Processing
Winter 2020/21	seminar	5	Knowledge Representation and Processing
Winter 2020/21	lab	2.5	Artificial Intelligence 1
Summer 2021	seminar	5	Knowledge Representation and Processing
Summer 2021	course	5	Logic-based knowledge representation for mathematical/technical knowledge
Summer 2021	course+lab	7.5	Knowledge Representation and Processing
Summer 2021	lab	2.5	Artificial Intelligence 2
Winter 2021/22	seminar	5	Knowledge Representation and Processing
Winter 2021/22	lab	2.5	Artificial Intelligence 1
Summer 2022	seminar	5	Knowledge Representation and Processing
Summer 2022	course	5	Logic-based knowledge representation for mathematical/technical knowledge
Summer 2022	lab	2.5	Artificial Intelligence 2
Winter 2022/23	course+lab	7.5	Knowledge Representation and Processing

Winter 2022/23	lab	2.5	Artificial Intelligence 1
Winter 2022/23	seminar	5	Knowledge Representation and Processing
Summer 2023	course	5	Logic-based knowledge representation for mathematical/technical knowledge
Summer 2023	lab	2.5	Artificial Intelligence 2
Summer 2023	seminar	5	Knowledge Representation and Processing

2.3 Advising of Students

After obtaining my Ph.D. degree in 2008 I have supervised students independently or in collaboration with Prof. Michael Kohlhase. By now all members of Prof. Kohlhase's research group work with my MMT language and system in one way or another so that I co-supervise all of them to varying degree. The following list includes only those students where supervision is/was primarily carried out by me.

I also maintain an extensive list of valuable advice for students, which is available at https://github.com/florian-rabe/Teaching/blob/master/general/advice_for_students.pdf.

B.Sc. students

2007–2008	Elena Agapie	CS	went on to Harvard University
2007–2008	Kristina Sojakova	Math	
2008–2009	Jana Gičeva	CS	went on to ETH Zürich
2008–2009	Alin Iacob	Math, CS	
2009–2010	Catalin David	CS	
2008–2010	Ştefania Dumbravă	Math	
2009–2010	Mihnea Iancu	CS	
2010–2011	Vladimir Zamdzhiev	Math, CS	went on to University of Oxford
2010–2012	Iulia Ignatov	CS	went on to ETH Zürich
2011–2012	Maria-Alexandra Alecu	CS	went on to University of Edinburgh
2012–2013	Felix Mance	CS	went on to ETH Zürich
2013–2014	Timo Lücke	Math	
2014–2015	Roxana Nadrag	CS	went on to industry
2016–2017	Shabbar Razaa	CS	went on to industry
2017–2018	Colin Rothgang	Math	went on to Berlin Mathematical School
2018–2019	Navid Roux	CS	
2020–2021	Christian Cerny	CS	
2021–2022	Luca Wolff	CS	
2021–2022	Moritz Blöcher	CS	

M.Sc. students

2008–2010	Kristina Sojakova	CS	went on to Carnegie Mellon University
2009–2011	Alin Iacob	CS	went on to industry
2009–2012	Fusun Horozal	CS	went on to industry
2010–2012	Ştefania Dumbravă	CS	went on to INRIA Saclay
2010–2012	Mihnea Iancu	CS	went on to industry
2015–2017	Tom Wiesing*	CS	
2016–2018	Jonas Betzendahl*	CS	
2019–2022	Sven Wille	CS	
2019–2022	Navid Roux	CS	
2020–2021	Annika Schmidt	CS	
2020–2022	Philipp Reger	CS	

2021–2023	Colin Rothgang	Math	extern at Berlin Mathematical School
2021–2023	Franziska Weber	CS	
2021–2023	Alexander Mattick	CS	

Ph.D. students

2012–2017	Mihnea Iancu**	CS	went on to industry
2015–2019	Dennis Müller**	CS	
2018–	Jonas Betzendahl*	CS	

Post-docs

2015–2016	Christian Maeder*		
2018–2020	Katja Bercic*		
2019–	Dennis Müller*		

* co-supervised or otherwise mentored

** member of thesis committee

3 Academic Service

3.1 Academic Self-Governance

at University of Karlsruhe, Department of Computer Science

2001 – 2004	Elected member of student council and appointed member of study committee
2003	Member of professor hiring committee

at Jacobs University Bremen

2008 – 2010	Elected member of staff council
2010 – 2012	Member of provost search committee
2011 – 2012	Member of constitution committee

at University Erlangen-Nuremberg, Technical Faculty

2020	Member of professor hiring committee
------	--------------------------------------

in international organizations

2010 – 2013	Board of trustees, Mathematical Knowledge Management http://www.mkm-ig.org/
2012 – 2015	Steering Committee, Intelligent Computer Mathematics http://www.cicm-conference.org/
2015 –	Member, IFIP Working Group 2.1 on Algorithmic Languages and Calculi (observer until 2017) http://foswiki.cs.uu.nl/foswiki/IFIP21/
2016 –	Secretary/Treasurer, OpenMath Society http://www.openmath.org/society/index.html
2017 – 2019	Steering Committee, Intelligent Computer Mathematics http://www.cicm-conference.org/
2017 – 2022	Steering Committee (2018–2022: chair), Logical Frameworks and Meta Languages http://lfmtp.org/
2019 – 2024	Advisory Board, EU project Tipping Points in Earth Systems https://www.tipes.dk

3.2 Organization of Meetings

Conferences and Similar Meetings:

- 2011 Conference on Intelligent Computer Mathematics (CICM 2011)
member of organization committee
- 2015 Conference on Intelligent Computer Mathematics (CICM 2015)
member of organization committee
- 2016 Dagstuhl Seminar on Universality of Proofs
co-organizer
- 2017 Conference on Intelligent Computer Mathematics (CICM 2017)
member of organization committee
- 2018 Conference on Intelligent Computer Mathematics (CICM 2018)
member of organization committee (as PC chair)
- 2022 Conference on Intelligent Computer Mathematics (CICM 2022)
Workshop chair
- 2023 Dagstuhl Seminar on Automated mathematics: integrating proofs, algorithms and data
co-organizer
- 2023 Conference on Intelligent Computer Mathematics (CICM 2023)
Workshop chair

Workshops, Tutorials, Schools, and similar meetings:

- 2009 Workshop on Module Systems and Libraries for Proof Assistants (MLPA 2009)
at CADE 2009, with Carsten Schürmann
- 2010 Workshop on Module Systems and Libraries for Proof Assistants (MLPA 2010)
at FLoC 2010, with Carsten Schürmann
- 2011 Workshop on Module Systems and Libraries for Proof Assistants (MLPA 2011)
at ITP 2011, with Carsten Schürmann
- 2012 Second St. Jacobs Workshop
stand-alone
- 2013 Workshop on Programming Languages for Mechanized Mathematics Systems
at CICM 2013, with Iain Whiteside
- 2016 MMT Tutorial
at CICM 2016, main organizer
- 2016 Tetrapod Workshop
at CICM 2016, co-organizer
- 2017 Workshop on Logical Frameworks and Meta Languages: Theory and Practice
at FSCD 2017, with Marino Miculan
- 2018 Workshop on Modular Knowledge
at FLoC 2018, with Jacques Carette, Dennis Müller
- 2018 MMT Tutorial
at World Congress on Universal Logic, main organizer
- 2018 Session on Composable Mathematical Software
at ICMS 2018, with Markus Pfeiffer, Nicolas Thiery,
- 2019 Summer School on Formalizing the Zoo of Logical Systems
at ESSLI 2019, with Michael Kohlhase
- 2020 Workshop on Natural Formal Mathematics
at CICM 2020, with Peter Koepke
- 2021 GI Annual Meeting in Deduction + Logic in Computer Science
with Sergey Goncharov
- 2022 GI Annual Meeting in Deduction + Logic in Computer Science

- with Sergey Goncharov
- 2023 GI Annual Meeting in Deduction
at KI 2023, with Claudia Schon
- 2024 Workshop on Logical Frameworks and Meta Languages: Theory and Practice
at ??? 2024, with Claudio Sacerdoti Coen

3.3 Peer Review

Membership in Program Committees

Conferences:

- 2010 member Mathematical Knowledge Management (MKM)
- 2010 member Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD)
- 2011 track chair Mathematical Knowledge Management (MKM)
- 2012 member Intelligent Computer Mathematics (CICM)
- 2013 member Intelligent Computer Mathematics (CICM)
- 2014 member Mathematical Knowledge Management (MKM)
- 2014 member Calculemus
- 2015 track chair Systems & Data track at the Conference on Intelligent Computer Mathematics (S&D at CICM)
- 2016 member Intelligent Computer Mathematics (CICM)
- 2016 member Algebraic Development Techniques (WADT, post-proceedings)
- 2017 track chair Mathematical Knowledge Management (MKM)
- 2018 chair Intelligent Computer Mathematics (CICM)
- 2018 member Mathematical Software (ICMS)
- 2019 member Intelligent Computer Mathematics (CICM)
- 2020 member Asian Symposium on Programming Languages and Systems (APLAS)
- 2020 member Intelligent Computer Mathematics (CICM)
- 2021 member Intelligent Computer Mathematics (CICM)
- 2022 member Intelligent Computer Mathematics (CICM)
- 2023 member Automated Deduction (CADE)

Workshops:

- 2008 member Practical Aspects of Automated Reasoning (PAAR at IJCAR 2008)
- 2009 member special issue of AI Communications for PAAR 2008
- 2009 co-chair Module Systems and Libraries for Proof Assistants (MLPA at CADE 2009)
- 2009 member TPTP World Workshop (TPTPWöWo at CADE 2009), eventually cancelled
- 2010 co-chair Module Systems and Libraries for Proof Assistants (MLPA at FLoC 2010)
- 2010 member International Workshop on Implementations of Logics (IWIL at LPAR 2010)
- 2011 co-chair Module Systems and Libraries for Proof Assistants (MLPA, part of LFMTTP/MLPA at ITP 2011)
- 2013 member Proof Exchange for Theorem Proving (PxTP at CADE 2013)
- 2013 member ACM SIGPLAN Workshop on Generic Programming (WGP at ICFP 2013)
- 2013 member Logical Frameworks and Meta-Languages: Theory and Practice (LFMTTP at ICFP 2013)
- 2013 co-chair Programming Languages for Mechanized Mathematics Systems (PLMMS at CICM 2013)

2015	member	Deduktionstreffen (German Deduction Meeting, at CADE 2015)
2016	member	Deduktionstreffen (German Deduction Meeting, at KI 2016)
2017	co-chair	Logical Frameworks and Meta-Languages: Theory and Practice (LFMTP at FSCD 2017)
2017	member	Deduktionstreffen (German Deduction Meeting, at KI 2017)
2017	member	Proof Exchange for Theorem Provers (PxTP at FroCos/ITP/Tableaux 2017)
2018	member	Deduktionstreffen (German Deduction Meeting)
2018	panel member	CADE ATP System Competition (CASC at FLoC 2018)
2018	member	Mathematical Models and Mathematical Software as Research Data (M3SRD at CICM 2018)
2018	co-chair	Workshop on Modular Knowledge (Tetrapod at FLoC 2018)
2018	co-chair	Composable Mathematical Software (at ICMS 2018)
2019	member	Logical Frameworks and Meta-Languages: Theory and Practice (LFMTP at LICS 2019)
2019	member	Formal Verification of Physical Systems (FVPS at CICM 2019)
2019	member	Large Mathematical Libraries (LML at CICM 2019)
2019	member	Proof Exchange for Theorem Provers (PxTP at CADE 2019)
2019	member	Logical and Semantic Frameworks, with Applications (LSFA at CADE 2019)
2019	member	Deduktionstreffen (German Deduction Meeting)
2020	co-chair	Natural Formal Mathematics (NFM at CICM 2020)
2022	member	Deduktionstreffen (German Deduction Meeting)
2023	co-chair	Deduktionstreffen (German Deduction Meeting)
2024	co-chair	Logical Frameworks and Meta-Languages: Theory and Practice (LFMTP at ??? 2024)

Individual Reviews

Journals: Axioms, Formal Aspects of Computing, Fuzzy Sets and Systems, Information and Computation, Information Processing Letters, Journal of Automated Reasoning, Journal of Formalized Reasoning, Journal of Functional Programming, Journal of Logic and Computation, Logic and Logical Philosophy, Logica Universalis, Logical Methods in Computer Science, Mathematical Structures in Computer Science, Mathematics in Computer Science, Theoretical Computer Science

Conferences: CADE, FroCoS, IJCAR, ISSAC, LICS, LPAR, MKM, TPHOLs, Types, WADT

Review aggregators: Bulletin of Symbolic Logic, AMS Mathematical Reviews

Reviewing of Grant Proposals

2017	Estonian Research Council	2 proposals, about 1 million € each
2017	Vienna Science and Technology Fund	1 proposal, about 1 million €
2018	Czech Science Foundation	1 proposal for 2×3 person-years
2020	FNR Luxembourg	1 proposal, about 1 million €
2023	ERC	1 proposal, about 3 million €

3.4 Invited Talks

Year	Inviter/Venue
2008	Gesellschaft für Informatik
2010	Workshop on Communities of Practice workshop
2014	Chalmers University, functional programming division
2015	SRI International, Menlo Park
2015	Kestrel Institute, Palo Alto
2015	Inria, Parsifal team
2015	Inria, FoCaLiZe team
2015	Annual Meeting of German Mathematicians: Mathematics on the Web and Mathematical Knowledge Management
2016	ENSIIS/ENS Cachan, Paris
2016	University Paris-Sud, VALS team
2018	University Paris-Sud, GALAC team
2018	Inria, Parsifal team
2019	Hong Kong University, programming languages group
2019	Heriot-Watt University, ULTRA group
2019	University of Ljubljana, Institute of Mathematics, Physics, and Mechanics
2019	Congress of Romanian Mathematicians: Mathematical Structures in Formal System Development and Analysis (unable to attend)
2019	International Centre for Mathematical Science, Edinburgh: Big Proof workshop (invited participant)
2020	Hausdorff Center for Mathematics, Bonn: Mathematical Language and Practical Type Theory
2020	Every Proof Assistant Seminar, Andrej Bauer
2022	Tipping Points in Earth System (EU Horizon 2020 project), Annual General Assembly
2022	EuroProofNet (EU cost action), meeting of WG Libraries
2023	Hausdorff Center for Mathematics, Bonn
2023	University of Waterloo, School of Computer Science
2023	University of Applied Sciences, Trier, Germany
2023	Dagstuhl seminar on Next Generation Deduction Systems
2023	American Institute of Mathematic: Open-source cyberinfrastructure supporting mathematics research

4 Major Software Projects

I have taken great care to couple all my theoretical research with the corresponding practical software development. I am the main developer of the following open-source software systems, which are the major practical outcome of my work.

- MMT, written in Scala, 100,000 lines of code, lead developer among 20 contributors
<https://uniformal.github.io>
This is the reference implementation of the MMT language for the scalable representation and management of formal knowledge. It includes fully integrated implementations of knowledge management services and connections to external systems.
- Twelf module system, written in SML, ~ 500 source files
<http://twelf.org>
This is an extension of the Twelf logical framework with a module system and namespace

management. The implementation substantially changed the main data structures and thus affected almost every source file.

- LATIN logic atlas, written in modular Twelf, > 1000 modules
<https://uniformal.github.io/doc/archives/LATIN/index>
This is a library of formalizations of logics, type theories, and related formal languages, including their semantics and interrelations. It takes the style of an inventory of formal systems in use in computer science and is the main library MMT works with.
- MathHub library (with Prof. Kohlhase)
This ongoing project applies MMT to obtain a generic management and integration platform for formal libraries. It includes representations of dozens of systems libraries from logic and mathematics using MMT as a standardized representation format.
- DafnyLite Compiler (at Amazon Web Services)
This ongoing project develops an idiomatic compiler from the theorem prover Dafny into mainstream programming languages. It includes backends for Java and Rust.

5 Publications

The order of authors is usually *alphabetical* in my field even if the relative contributions vary. When justifiable by their contribution and as a part of their education, I usually suggest students to be first authors of papers written with me.

Co-authors who were students advised by me are underlined.

Metrics and Overviews All research papers are openly accessible from my homepage at <https://kwarc.info/frabe/Research/pubscv.html>.

Google Scholar metrics (https://scholar.google.com/citations?user=L6o_hKAAAAAJ):

document count	185
citation count	1766
h-index	23
i10-index	54

Scopus metrics (<https://www.scopus.com/authid/detail.uri?authorId=25121805000>):

document count	89
citation count	699
h-index	15

5.1 Articles in Journals

- [1] J. Carette, W. Farmer, M. Kohlhase, and F. Rabe. Big Math and the One-Brain Barrier: The Tetrapod Model of Mathematical Knowledge. *The Mathematical Intelligencer*, 43(1):78–87, 2021.
- [2] M. Kohlhase and F. Rabe. Experiences from Exporting Major Proof Assistant Libraries. *Journal of Automated Reasoning*, 65(8):1265–1298, 2021.
- [3] K. Berčič, M. Kohlhase, and F. Rabe. (Deep) FAIR Mathematics. *it - Information Technology*, 62(1):7–17, 2020.
- [4] T. Koprucki, M. Kohlhase, K. Tabelow, D. Müller, and F. Rabe. Model pathway diagrams for the representation of mathematical models. *Optical and Quantum Electronics*, 50(70), 2018.

- [5] F. Rabe. A Modular Type Reconstruction Algorithm. *ACM Transactions on Computational Logic*, 19(4):1–43, 2018.
- [6] G. Dowek, C. Dubois, B. Pientka, and F. Rabe. Universality of Proofs (Dagstuhl Seminar 16421). *Dagstuhl Reports by Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik*, 6(10):75–98, 2017. see <http://drops.dagstuhl.de/opus/volltexte/2017/6951/>.
- [7] F. Rabe. How to Identify, Translate, and Combine Logics? *Journal of Logic and Computation*, 27(6):1753–1798, 2017.
- [8] F. Rabe. Morphism Axioms. *Theoretical Computer Science*, 691:55–80, 2017.
- [9] M. Kohlhase and F. Rabe. QED Reloaded: Towards a Pluralistic Formal Library of Mathematical Knowledge. *Journal of Formalized Reasoning*, 9(1):201–234, 2016.
- [10] F. Rabe. Lax Theory Morphisms. *ACM Transactions on Computational Logic*, 17(1), 2015.
- [11] F. Rabe. The Future of Logic: Foundation-Independence. *Logica Universalis*, 10(1):1–20, 2015. 10.1007/s11787-015-0132-x; Winner of the Contest “The Future of Logic” at the World Congress on Universal Logic.
- [12] F. Rabe. A Logical Framework Combining Model and Proof Theory. *Mathematical Structures in Computer Science*, 23(5):945–1001, 2013.
- [13] F. Rabe and M. Kohlhase. A Scalable Module System. *Information and Computation*, 230(1):1–54, 2013.
- [14] F. Rabe and K. Sojakova. Logical Relations for a Logical Framework. *ACM Transactions on Computational Logic*, 14(4):1–34, 2013.
- [15] M. Iancu, M. Kohlhase, F. Rabe, and J. Urban. The Mizar Mathematical Library in OMDoc: Translation and Applications. *Journal of Automated Reasoning*, 50(2):191–202, 2013.
- [16] M. Kohlhase and F. Rabe. Semantics of OpenMath and MathML3. *Mathematics in Computer Science*, 6(3):235–260, 2012.
- [17] S. Awodey and F. Rabe. Kripke Semantics for Martin-Löf’s Extensional Type Theory. *Logical Methods in Computer Science*, 7(3), 2011.
- [18] F. Horozal and F. Rabe. Representing Model Theory in a Type-Theoretical Logical Framework. *Theoretical Computer Science*, 412(37):4919–4945, 2011.
- [19] M. Iancu and F. Rabe. Formalizing Foundations of Mathematics. *Mathematical Structures in Computer Science*, 21(4):883–911, 2011.
- [20] J. Goguen, T. Mossakowski, V. de Paiva, F. Rabe, and L. Schröder. An Institutional View on Categorical Logic. *International Journal of Software and Informatics*, 1(1):129–152, 2007.
- [21] F. Rabe, P. Pudlák, G. Sutcliffe, and W. Shen. Solving the \$100 Modal Logic Challenge. *Journal of Applied Logic*, 7(1):113–130, 2007.

5.2 Refereed Articles in Major Collections

- [1] F. Rabe and [F. Weber](#). Morphism Equality in Theory Graphs. In C. Dubois and M. Kerber, editors, *Intelligent Computer Mathematics*, volume 14101 of *Lecture Notes in Computer Science*, pages 174–189. Springer, 2023.
- [2] F. Rabe and S. Watt. Extracting Theory Graphs from Aldor Libraries. In C. Dubois and M. Kerber, editors, *Intelligent Computer Mathematics*, volume 14101 of *Lecture Notes in Computer Science*, pages 315–320. Springer, 2023.
- [3] [C. Rothgang](#), F. Rabe, and C. Benz Müller. Theorem Proving in Dependently Typed Higher-Order Logic. In B. Pientka and C. Tinelli, editors, *Automated Deduction*, volume 14132 of *Lecture Notes in Computer Science*, pages 438–455. Springer, 2023.
- [4] F. Rabe. A Language with Type-Dependent Equality. In F. Kamareddine and C. Sacerdoti Coen, editors, *Intelligent Computer Mathematics*, volume 12833 of *Lecture Notes in Computer Science*, pages 211–227. Springer, 2021.
- [5] [C. Rothgang](#), A. Kornilowicz, and F. Rabe. A New Export of the Mizar Mathematical Library. In F. Kamareddine and C. Sacerdoti Coen, editors, *Intelligent Computer Mathematics*, volume 12833 of *Lecture Notes in Computer Science*, pages 205–210. Springer, 2021.
- [6] K. Berčić, M. Kohlhase, and F. Rabe. Towards a Heterogeneous Query Language for Mathematical Knowledge. In C. Benz Müller and B. Miller, editors, *Intelligent Computer Mathematics*, volume 12236 of *Lecture Notes in Computer Science*, pages 39–54. Springer, 2020.
- [7] C. Kaliszyk and F. Rabe. A Survey of Languages for Formalizing Mathematics. In C. Benz Müller and B. Miller, editors, *Intelligent Computer Mathematics*, volume 12236 of *Lecture Notes in Computer Science*, pages 138–156. Springer, 2020.
- [8] M. Kohlhase, F. Rabe, C. Sacerdoti Coen, and J. Schaefer. Logic-Independent Proof Search in Logical Frameworks (short paper). In N. Peltier and V. Sofronie-Stokkermans, editors, *Automated Reasoning*, volume 12166 of *Lecture Notes in Computer Science*, pages 395–401. Springer, 2020.
- [9] R. Marcus, M. Kohlhase, and F. Rabe. 3-Dimensional Graph Visualization of Mathematical Knowledge. In C. Benz Müller and B. Miller, editors, *Intelligent Computer Mathematics*, volume 12236 of *Lecture Notes in Computer Science*, pages 290–296. Springer, 2020.
- [10] F. Rabe and N. Roux. Structure-Preserving Diagram Operators. In M. Roggenbach, editor, *Recent Trends in Algebraic Development Techniques*, volume 12669 of *Lecture Notes in Computer Science*, pages 142–163. Springer, 2020.
- [11] [D. Müller](#), [C. Rothgang](#), F. Rabe, and M. Kohlhase. Representing Structural Language Features in Formal Meta-Languages. In C. Benz Müller and B. Miller, editors, *Intelligent Computer Mathematics*, volume 12236 of *Lecture Notes in Computer Science*, pages 206–221. Springer, 2020.
- [12] K. Amann, M. Kohlhase, F. Rabe, and T. Wiesing. Integrating Semantic Mathematical Documents and Dynamic Notebooks. In C. Kaliszyk, E. Brady, A. Kohlhase, and C. Sacerdoti Coen, editors, *Intelligent Computer Mathematics*, volume 11617 of *Lecture Notes in Computer Science*, pages 275–290. Springer, 2019.
- [13] K. Berčić, M. Kohlhase, and F. Rabe. Towards a Unified Mathematical Data Infrastructure: Database and Interface Generation. In C. Kaliszyk, E. Brady, A. Kohlhase, and C. Sacerdoti Coen, editors, *Intelligent Computer Mathematics*, volume 11617 of *Lecture Notes in Computer Science*, pages 28–43. Springer, 2019.

- [14] R. Bird and F. Rabe. How to calculate with nondeterministic functions. In G. Hutton, editor, *Mathematics of Program Construction*, volume 11825 of *Lecture Notes in Computer Science*, pages 138–154. Springer, 2019.
- [15] A. Condoluci, M. Kohlhase, D. Müller, F. Rabe, C. Sacerdoti Coen, and M. Wenzel. Relational Data Across Mathematical Libraries. In C. Kaliszyk, E. Brady, A. Kohlhase, and C. Sacerdoti Coen, editors, *Intelligent Computer Mathematics*, volume 11617 of *Lecture Notes in Computer Science*, pages 61–76. Springer, 2019.
- [16] M. Kohlhase, F. Rabe, and M. Wenzel. Making Isabelle Content Accessible in Knowledge Representation Formats. In M. Bezem and A. Mahboubi, editors, *Types for Proofs and Programs (TYPES)*, volume 175 of *LIPICs—Leibniz International Proceedings in Informatics*. Schloss Dagstuhl—Leibniz Center for Informatics, 2019.
- [17] F. Rabe. MMTTeX: Connecting Content and Narration-Oriented Document Formats. In C. Kaliszyk, E. Brady, A. Kohlhase, and C. Sacerdoti Coen, editors, *Intelligent Computer Mathematics*, volume 11617 of *Lecture Notes in Computer Science*, pages 205–210. Springer, 2019.
- [18] Y. Sharoda and F. Rabe. Diagram Operators in MMT. In C. Kaliszyk, E. Brady, A. Kohlhase, and C. Sacerdoti Coen, editors, *Intelligent Computer Mathematics*, volume 11617 of *Lecture Notes in Computer Science*, pages 211–226. Springer, 2019.
- [19] D. Müller and F. Rabe. Structuring Theories with Implicit Morphisms. In J. Fiadeiro and I. Tutu, editors, *Recent Trends in Algebraic Development Techniques*, volume 11563 of *Lecture Notes in Computer Science*, pages 154–173. Springer, 2019.
- [20] D. Müller, F. Rabe, and C. Sacerdoti Coen. The Coq Library as a Theory Graph. In C. Kaliszyk, E. Brady, A. Kohlhase, and C. Sacerdoti Coen, editors, *Intelligent Computer Mathematics*, volume 11617 of *Lecture Notes in Computer Science*, pages 171–186. Springer, 2019.
- [21] D. Müller, M. Kohlhase, and F. Rabe. Automatically Finding Theory Morphisms for Knowledge Management. In F. Rabe, W. Farmer, G. Passmore, and A. Youssef, editors, *Intelligent Computer Mathematics*, volume 11006 of *Lecture Notes in Computer Science*, pages 209–224. Springer, 2018.
- [22] D. Müller, F. Rabe, and M. Kohlhase. Theories as Types. In D. Galmiche, S. Schulz, and R. Sebastiani, editors, *Automated Reasoning*, volume 10900 of *Lecture Notes in Computer Science*, pages 575–590. Springer, 2018.
- [23] M. Codescu, T. Mossakowski, and F. Rabe. Canonical Selection of Colimits. In P. James and M. Roggenbach, editors, *Recent Trends in Algebraic Development Techniques*, volume 10644 of *Lecture Notes in Computer Science*, pages 170–188. Springer, 2017.
- [24] M. Kohlhase, D. Müller, S. Owre, and F. Rabe. Making PVS Accessible to Generic Services by Interpretation in a Universal Format. In M. Ayala-Rincon and C. Munoz, editors, *Interactive Theorem Proving*, volume 10499 of *Lecture Notes in Computer Science*, pages 319–335. Springer, 2017.
- [25] M. Kohlhase, D. Müller, M. Pfeiffer, F. Rabe, N. Thiéry, V. Vasilyev, and T. Wiesing. Knowledge-Based Interoperability for Mathematical Software Systems. In J. Blömer, I. Kotiresas, T. Kutsia, and D. Simos, editors, *Mathematical Aspects of Computer and Information Sciences*, volume 10693 of *Lecture Notes in Computer Science*, pages 195–210. Springer, 2017.
- [26] D. Müller, T. Gauthier, C. Kaliszyk, M. Kohlhase, and F. Rabe. Classification of Alignments between Concepts of Formal Mathematical Systems. In H. Geuvers, M. England, O. Hasan,

- F. Rabe, and O. Teschke, editors, *Intelligent Computer Mathematics*, volume 10383 of *Lecture Notes in Computer Science*, pages 83–98. Springer, 2017.
- [27] T. Wiesing, M. Kohlhase, and F. Rabe. Virtual Theories – A Uniform Interface to Mathematical Knowledge Bases. In J. Blömer, I. Kotsireas, T. Kutsia, and D. Simos, editors, *Mathematical Aspects of Computer and Information Sciences*, volume 10693 of *Lecture Notes in Computer Science*, pages 243–257. Springer, 2017.
- [28] P. Dehaye, M. Iancu, M. Kohlhase, A. Konovalov, S. Lelièvre, D. Müller, M. Pfeiffer, F. Rabe, N. Thiéry, and T. Wiesing. Interoperability in the OpenDreamKit Project: The Math-in-the-Middle Approach. In M. Kohlhase, L. de Moura, M. Johansson, B. Miller, and F. Tompa, editors, *Intelligent Computer Mathematics*, volume 9791 of *Lecture Notes in Computer Science*, pages 117–131. Springer, 2016.
- [29] F. Rabe. Generic Literals. In M. Kerber, J. Carette, C. Kaliszyk, F. Rabe, and V. Sorge, editors, *Intelligent Computer Mathematics*, volume 9150 of *Lecture Notes in Computer Science*, pages 102–117. Springer, 2015.
- [30] F. Horozal and F. Rabe. Formal Logic Definitions for Interchange Languages. In M. Kerber, J. Carette, C. Kaliszyk, F. Rabe, and V. Sorge, editors, *Intelligent Computer Mathematics*, volume 9150 of *Lecture Notes in Computer Science*, pages 171–186. Springer, 2015.
- [31] C. Kaliszyk and F. Rabe. Towards Knowledge Management for HOL Light. In S. Watt, J. Davenport, A. Sexton, P. Sojka, and J. Urban, editors, *Intelligent Computer Mathematics*, volume 8543 of *Lecture Notes in Computer Science*, pages 357–372. Springer, 2014.
- [32] F. Horozal, F. Rabe, and M. Kohlhase. Flexary Operators for Formalized Mathematics. In S. Watt, J. Davenport, A. Sexton, P. Sojka, and J. Urban, editors, *Intelligent Computer Mathematics*, volume 8543 of *Lecture Notes in Computer Science*, pages 312–327. Springer, 2014.
- [33] M. Codescu, F. Horozal, A. Jakubauskas, T. Mossakowski, and F. Rabe. Compiling Logics. In N. Martí-Oliet and M. Palomino, editors, *Recent Trends in Algebraic Development Techniques 2012*, volume 7841 of *Lecture Notes in Computer Science*, pages 111–126. Springer, 2013.
- [34] M. Kohlhase, F. Mance, and F. Rabe. A Universal Machine for Biform Theory Graphs. In J. Carette, D. Aspinall, C. Lange, P. Sojka, and W. Windsteiger, editors, *Intelligent Computer Mathematics*, volume 7961 of *Lecture Notes in Computer Science*, pages 82–97. Springer, 2013.
- [35] F. Rabe. The MMT API: A Generic MKM System. In J. Carette, D. Aspinall, C. Lange, P. Sojka, and W. Windsteiger, editors, *Intelligent Computer Mathematics*, volume 7961 of *Lecture Notes in Computer Science*, pages 339–343. Springer, 2013.
- [36] M. Codescu, F. Horozal, M. Kohlhase, T. Mossakowski, and F. Rabe. A Proof Theoretic Interpretation of Model Theoretic Hiding. In T. Mossakowski and H. Kreowski, editors, *Recent Trends in Algebraic Development Techniques 2010*, volume 7137 of *Lecture Notes in Computer Science*, pages 118–138. Springer, 2012.
- [37] M. Codescu, F. Horozal, M. Kohlhase, T. Mossakowski, F. Rabe, and K. Sojakova. Towards Logical Frameworks in the Heterogeneous Tool Set Hets. In T. Mossakowski and H. Kreowski, editors, *Recent Trends in Algebraic Development Techniques 2010*, volume 7137 of *Lecture Notes in Computer Science*, pages 139–159. Springer, 2012.
- [38] F. Rabe. A Query Language for Formal Mathematical Libraries. In J. Campbell, J. Carette, G. Dos Reis, J. Jeuring, P. Sojka, V. Sorge, and M. Wenzel, editors, *Intelligent Computer Mathematics*, volume 7362 of *Lecture Notes in Computer Science*, pages 142–157. Springer, 2012.

- [39] [F. Horozal](#), M. Kohlhase, and F. Rabe. Extending MKM Formats at the Statement Level. In J. Campbell, J. Carette, G. Dos Reis, J. Jeuring, P. Sojka, V. Sorge, and M. Wenzel, editors, *Intelligent Computer Mathematics*, volume 7362 of *Lecture Notes in Computer Science*, pages 64–79. Springer, 2012.
- [40] [M. Iancu](#) and F. Rabe. Management of Change in Declarative Languages. In J. Campbell, J. Carette, G. Dos Reis, J. Jeuring, P. Sojka, V. Sorge, and M. Wenzel, editors, *Intelligent Computer Mathematics*, volume 7362 of *Lecture Notes in Computer Science*, pages 325–340. Springer, 2012.
- [41] M. Codescu, [F. Horozal](#), M. Kohlhase, T. Mossakowski, and F. Rabe. Project Abstract: Logic Atlas and Integrator (LATIN). In J. Davenport, W. Farmer, F. Rabe, and J. Urban, editors, *Intelligent Computer Mathematics*, volume 6824 of *Lecture Notes in Computer Science*, pages 289–291. Springer, 2011.
- [42] F. Rabe, M. Kohlhase, and C. Sacerdoti Coen. A Foundational View on Integration Problems. In J. Davenport, W. Farmer, F. Rabe, and J. Urban, editors, *Intelligent Computer Mathematics*, volume 6824 of *Lecture Notes in Computer Science*, pages 107–122. Springer, 2011.
- [43] [F. Horozal](#), [A. Iacob](#), C. Jucovski, M. Kohlhase, and F. Rabe. Combining Source, Content, Presentation, Narration, and Relational Representation. In J. Davenport, W. Farmer, F. Rabe, and J. Urban, editors, *Intelligent Computer Mathematics*, volume 6824 of *Lecture Notes in Computer Science*, pages 212–227. Springer, 2011.
- [44] C. David, M. Kohlhase, C. Lange, F. Rabe, and V. Zholudev. Publishing Math Lecture Notes as Linked Data. In L. Aroyo, G. Antoniou, E. Hyvönen, A. ten Teije, H. Stuckenschmidt, L. Cabral, and T. Tudorache, editors, *The Semantic Web: Research and Applications*, volume 6089 of *Lecture Notes in Computer Science*, pages 370–375. Springer, 2010.
- [45] M. Kohlhase, F. Rabe, and V. Zholudev. Towards MKM in the Large: Modular Representation and Scalable Software Architecture. In S. Autexier, J. Calmet, D. Delahaye, P. Ion, L. Rideau, R. Rioboo, and A. Sexton, editors, *Intelligent Computer Mathematics*, volume 6167 of *Lecture Notes in Computer Science*, pages 370–384. Springer, 2010.
- [46] V. Zholudev, M. Kohlhase, and F. Rabe. A [insert XML Format] Database for [insert cool application]. In *XMLPrague 2010*, Proceedings of XMLPrague. XMLPrague.cz, 2010.
- [47] S. Awodey and F. Rabe. Kripke Semantics for Martin-Löf’s Extensional Type Theory. In P. Curien, editor, *Typed Lambda Calculi and Applications (TLCA)*, volume 5608 of *Lecture Notes in Computer Science*, pages 249–263. Springer, 2009.
- [48] J. Gičeva, C. Lange, and F. Rabe. Integrating Web Services into Active Mathematical Documents. In J. Carette, L. Dixon, C. Sacerdoti Coen, and S. Watt, editors, *Intelligent Computer Mathematics*, volume 5625 of *Lecture Notes in Computer Science*, pages 279–293. Springer, 2009.
- [49] [K. Sojakova](#) and F. Rabe. Translating a Dependently-Typed Logic to First-Order Logic. In A. Corradini and U. Montanari, editors, *Recent Trends in Algebraic Development Techniques*, volume 5486 of *Lecture Notes in Computer Science*, pages 326–341. Springer, 2009.
- [50] C. Benz Müller, F. Rabe, and G. Sutcliffe. THF0 – The core of the TPTP Language for Higher-Order Logic. In A. Armando, P. Baumgartner, and G. Dowek, editors, *4th International Joint Conference on Automated Reasoning*, volume 5195 of *Lecture Notes in Computer Science*, pages 491–506. Springer, 2008.
- [51] M. Kohlhase, C. Müller, and F. Rabe. Notations for Living Mathematical Documents. In S. Autexier, J. Campbell, J. Rubio, V. Sorge, M. Suzuki, and F. Wiedijk, editors, *Mathematical*

Knowledge Management, volume 5144 of *Lecture Notes in Computer Science*, pages 504–519. Springer, 2008.

- [52] F. Rabe. First-Order Logic with Dependent Types. In N. Shankar and U. Furbach, editors, *Automated Reasoning*, volume 4130 of *Lecture Notes in Computer Science*, pages 377–391. Springer, 2006.

5.3 Refereed Articles in Other Collections

- [1] D. Lohr, M. Berges, M. Kohlhase, and F. Rabe. The Potential of Answer Classes in Large-scale Written Computer Science Exams. In J. Desel and S. Opel, editors, *Hochschuldidaktik Informatik (HDI)*, 2023.
- [2] F. Rabe and N. Roux. Translating Formalizations of Type Theories from Intrinsic to Extrinsic Style. In E. Pimentel and E. Tassi, editors, *Proceedings of the Workshop on Logical Frameworks: Meta-Theory and Practice (LFMTP)*, volume 337 of *Electronic Proceedings in Theoretical Computer Science*, pages 88–103. Open Publishing Association, 2021.
- [3] D. Müller and F. Rabe. Rapid Prototyping Formal Systems in MMT: Case Studies. In D. Miller and I. Scagnetto, editors, *Logical Frameworks and Meta-languages: Theory and Practice*, volume 307 of *Electronic Proceedings in Theoretical Computer Science*, pages 40–54, 2019.
- [4] D. Müller, C. Rothgang, Y. Liu, and F. Rabe. Alignment-based Translations Across Formal Systems Using Interface Theories. In C. Dubois and B. Woltzenlogel Paleo, editors, *Proof eXchange for Theorem Proving*, volume 262 of *Electronic Proceedings in Theoretical Computer Science*, pages 77–93. Open Publishing Association, 2017.
- [5] C. Kaliszyk, F. Rabe, and G. Sutcliffe. TH1: The TPTP Typed Higher-Order Form with Rank-1 Polymorphism. In P. Fontaine, S. Schulz, and J. Urban, editors, *Workshop on Practical Aspects of Automated Reasoning*, pages 41–55, 2016.
- [6] F. Rabe. A Logic-Independent IDE. In C. Benz Müller and B. Woltzenlogel Paleo, editors, *Workshop on User Interfaces for Theorem Provers*, volume 167 of *Electronic Notes in Theoretical Computer Science*, pages 48–60. Elsevier, 2014.
- [7] M. Iancu and F. Rabe. (Work-in-Progress) An MMT-Based User-Interface. In C. Kaliszyk and C. Lüth, editors, *Workshop on User Interfaces for Theorem Provers*, 2012.
- [8] F. Rabe. Representing Isabelle in LF. In K. Crary and M. Miculan, editors, *Logical Frameworks and Meta-languages: Theory and Practice*, volume 34 of *Electronic Proceedings in Theoretical Computer Science*, pages 85–100. Open Publishing Association, 2010.
- [9] F. Rabe and C. Schürmann. A Practical Module System for LF. In J. Cheney and A. Felty, editors, *Proceedings of the Workshop on Logical Frameworks: Meta-Theory and Practice (LFMTP)*, volume LFMTP’09 of *ACM International Conference Proceeding Series*, pages 40–48. ACM Press, 2009.
- [10] F. Horozal and F. Rabe. Representing Model Theory in a Type-Theoretical Logical Framework. In M. Ayala-Rincón and F. Kamareddine, editors, *Fourth Workshop on Logical and Semantic Frameworks, with Applications*, volume 256 of *Electronic Notes in Theoretical Computer Science*, pages 49–65. Elsevier, 2009.
- [11] C. Lange, S. McLaughlin, and F. Rabe. Flyspeck in a Semantic Wiki. In C. Lange, S. Schaffert, H. Skaf-Molli, and M. Völkel, editors, *Semantic Wiki Workshop*, volume 360 of *CEUR Workshop Proceedings*, pages 67–81. CEUR-WS.org, 2008.

- [12] F. Rabe and M. Kohlhase. An Exchange Format for Modular Knowledge. In G. Sutcliffe, P. Rudnicki, R. Schmidt, B. Konev, and S. Schulz, editors, *Proceedings of the LPAR Workshops on Knowledge Exchange: Automated Provers and Proof Assistants, and The 7th International Workshop on the Implementation of Logics*, volume 418 of *CEUR Workshop Proceedings*, pages 50–68. CEUR-WS.org, 2008.
- [13] F. Rabe. Towards Determining the Subset Relation between Propositional Modal Logics. In G. Sutcliffe, R. Schmidt, and S. Schulz, editors, *Proceedings of the FLoC 06 Workshop on Empirically Successful Computerized Reasoning, 3rd International Joint Conference on Automated Reasoning*, volume 192 of *CEUR Workshop Proceedings*, pages 126–140. CEUR-WS.org, 2006.
- [14] F. Rabe, S. Schlager, and P. Schmitt. A Sequent Calculus for a First-order Dynamic Logic with Trace Modalities for Promela⁺. In *Short Paper Proceedings of the International Conference on Logic for Programming, Artificial Intelligence, and Reasoning*, pages 21–27, 2005.

5.4 Invited Articles in Collections

- [1] F. Rabe. Representing Logics and Logic Translations. In D. Wagner et al., editor, *Ausgezeichnete Informatikdissertationen 2008*, volume D-9 of *Lecture Notes in Informatics*, pages 201–210. Gesellschaft für Informatik e.V. (GI), 2009. English title: Outstanding Dissertations in Computer Science 2008.

5.5 Theses

- [1] F. Rabe. *A Scalable Logical Framework*. Habilitation thesis, Jacobs University Bremen, 2014. see http://kwarc.info/frabe/Research/rabe_habil_14.pdf.
- [2] F. Rabe. *Representing Logics and Logic Translations (Summary)*. PhD thesis, Jacobs University Bremen, 2008. see http://kwarc.info/frabe/Research/phdthesis_summary.pdf.
- [3] F. Rabe. *Representing Logics and Logic Translations*. PhD thesis, Jacobs University Bremen, 2008. see <http://kwarc.info/frabe/Research/phdthesis.pdf>.
- [4] F. Rabe. A Dynamic Logic with Temporal Operators for Promela. Master’s thesis, Universität Karlsruhe, Germany, 2004.

5.6 Edited Collections

- [1] O. Hasan, F. Rabe, and 19 others, editors. *Workshop Papers at CICM 2018*. CEUR-WS.org, 2019. see <http://ceur-ws.org/Vol-2307/>.
- [2] F. Rabe, W. Farmer, G. Passmore, and A. Youssef, editors. *Intelligent Computer Mathematics*, volume 11006 of *Lecture Notes in Computer Science*. Springer, 2018. see <https://www.springer.com/book/9783319968117>.
- [3] H. Geuvers, M. England, O. Hasan, F. Rabe, and O. Teschke, editors. *Intelligent Computer Mathematics*, volume 10383 of *Lecture Notes in Computer Science*. Springer, 2017. see <http://www.springer.com/gp/book/9783319620749>.

- [4] M. Miculan and F. Rabe, editors. *LFMTP: Proceedings of the Workshop on Logical Frameworks: Meta-Theory and Practice*, ACM International Conference Proceeding Series. ACM, 2017. see <http://dl.acm.org/citation.cfm?id=3130261>.
- [5] M. Miculan and F. Rabe, editors. *LFMTP: Work-in-Progress Proceedings of the Workshop on Logical Frameworks: Meta-Theory and Practice*. University of Udine, Department of Science, Mathematics, Computer Science, and Physics, 2017. see <https://www.dimi.uniud.it/la-ricerca/publicazioni/preprints/5.2017/>.
- [6] M. Kerber, J. Carette, C. Kaliszky, F. Rabe, and V. Sorge, editors. *Intelligent Computer Mathematics*, volume 9150 of *Lecture Notes in Computer Science*. Springer, 2015. see <http://www.springer.com/gp/book/9783319206141>.
- [7] C. Lange, D. Aspinall, J. Carette, J. Davenport, A. Kohlhase, M. Kohlhase, P. Libbrecht, P. Quaresma, F. Rabe, P. Sojka, I. Whiteside, and W. Windsteiger, editors. *Workshops and Work in Progress at CICM 2013*, volume 1010 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2013.
- [8] A. Asperti, J. Davenport, W. Farmer, F. Rabe, and J. Urban, editors. *Intelligent Computer Mathematics, Work-in-Progress Proceedings*, volume UBLCS-2011-04 of *Technical Reports of University of Bologna*. University of Bologna, 2011.
- [9] J. Davenport, W. Farmer, F. Rabe, and J. Urban, editors. *Intelligent Computer Mathematics*, volume 6824 of *Lecture Notes in Computer Science*. Springer, 2011. see <http://www.springer.com/gp/book/9783319206141>.
- [10] H. Geuvers, G. Nadathur, F. Rabe, and C. Schürmann, editors. *LFMTP 2011 - MLPA 2011 Informal Proceedings*, 2011. see <http://kwarc.info/frabe/events/mlpa-11/index.html>.
- [11] F. Rabe and C. Schürmann, editors. *MLPA '10: Proceedings of the 2nd Workshop on Modules and Libraries for Proof Assistants*, 2010. see <http://kwarc.info/frabe/events/mlpa-10.html>.
- [12] F. Rabe and C. Schürmann, editors. *MLPA '09: Proceedings of the 1st Workshop on Modules and Libraries for Proof Assistants*, volume 429 of *ACM International Conference Proceeding Series*. ACM, 2009.

5.7 Reviews

- [1] F. Rabe. Review of “Reasoning in Simple Type Theory – Festschrift in Honor of Peter B. Andrews on His 70th Birthday”. *Bulletin of Symbolic Logic*, 16(3):409–411, 2010.

5.8 Other Research Publications (most of them lightly refereed)

- [1] F. Rabe and F. Weber. Three Case Studies on Realms. In K. Buzzard and T. Kutsia, editors, *Intelligent Computer Mathematics, Informal Proceedings*, volume 6584 of *RISC Technical Report*, pages 46–51. Research Institute for Symbolic Computation, 2022.
- [2] K. Berčić, J. Carette, W. Farmer, D. Müller, M. Kohlhase, F. Rabe, and Y. Sharoda. The Space of Mathematical Software Systems – A Survey of Paradigmatic Systems. see <https://arxiv.org/abs/2002.04955>, 2020.

- [3] [D. Müller](#), M. Kohlhase, and F. Rabe. How to Leverage a Large Dataset of Formalized Mathematics with Machine Learning? In T. Hales, C. Kaliszyk, R. Kumar, S. Schulz, and J. Urban, editors, *Conference on Artificial Intelligence and Theorem Proving*, 2019.
- [4] [D. Müller](#) and F. Rabe. Structuring Theories with Implicit Morphisms. In J. Fiadeiro and I. Tutu, editors, *Workshop on Algebraic Development Techniques*, 2018.
- [5] F. Rabe. The MMT Perspective on Conservativity. In S. Alves and R. Wassermann, editors, *Logical and Semantic Frameworks, with Applications*, pages 17–33, 2017.
- [6] M. Codescu, T. Mossakowski, and F. Rabe. Selecting Colimits for Parameterisation and Networks of Specifications. In M. Roggenbach and P. James, editors, *Workshop on Algebraic Development Techniques*, 2016.
- [7] C. Kaliszyk, M. Kohlhase, [D. Müller](#), and F. Rabe. A Standard for Aligning Mathematical Concepts. In A. Kohlhase, M. Kohlhase, P. Libbrecht, B. Miller, F. Tompa, A. Naummowicz, W. Neuper, P. Quaresma, and M. Suda, editors, *Work in Progress at CICM 2016*, volume 1785 of *CEUR Workshop Proceedings*, pages 229–244. CEUR-WS.org, 2016.
- [8] R. Kumar and F. Rabe. Breakout session on A standard for system integration and proof interchange. In G. Dowek, C. Dubois, B. Pientka, and F. Rabe, editors, *Dagstuhl Seminar on Universality of Proofs*, volume 16421 of *Dagstuhl Reports*, pages 94–94. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, 2016.
- [9] F. Rabe. MMT: A UniFormal Approach to Knowledge Representation. In G. Dowek, C. Dubois, B. Pientka, and F. Rabe, editors, *Dagstuhl Seminar on Universality of Proofs*, volume 16421 of *Dagstuhl Reports*, pages 88–88. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, 2016.
- [10] F. Rabe. MMT Objects. In M. England, J. Davenport, A. Kohlhase, M. Kohlhase, P. Libbrecht, W. Neuper, P. Quaresma, A. Sexton, P. Sojka, J. Urban, and S. Watt, editors, *Workshops and Work in Progress at CICM 2014: OpenMath Workshop*, volume 1186 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2014.
- [11] [M. Iancu](#), [F. Mance](#), and F. Rabe. The Scala-REPL + MMT as a lightweight mathematical user interface. In C. Lange, D. Aspinall, J. Carette, J. Davenport, A. Kohlhase, M. Kohlhase, P. Libbrecht, P. Quaresma, F. Rabe, P. Sojka, I. Whiteside, and W. Windsteiger, editors, *Workshops and Work in Progress at CICM 2013: Mathematical User Interfaces (MathUI)*, volume 1010 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2013.
- [12] M. Codescu, [F. Horozal](#), T. Mossakowski, and F. Rabe. Compiling Logics. In *Workshop on Algebraic Development Techniques*, 2012.
- [13] M. Codescu, [F. Horozal](#), [I. Ignatov](#), and F. Rabe. Representing CASL in a Proof-Theoretical Logical Framework. In *Workshop on Algebraic Development Techniques*, 2012.
- [14] F. Rabe and [K. Sojakova](#). Mechanically Verifying Logic Translations. In *Workshop on Algebraic Development Techniques*, 2012.
- [15] [F. Horozal](#) and F. Rabe. Representing Categories of Theories in a Proof-Theoretical Logical Framework. In *Workshop on Algebraic Development Techniques*, 2012.
- [16] [F. Horozal](#), M. Kohlhase, and F. Rabe. Extending OpenMath with Sequences. In A. Asperti, J. Davenport, W. Farmer, F. Rabe, and J. Urban, editors, *Intelligent Computer Mathematics, Work-in-Progress Proceedings*, volume UBLCS-2011-04 of *Technical Report, University of Bologna*, pages 58–72. University of Bologna, 2011.

- [17] M. Iancu, M. Kohlhase, and F. Rabe. Translating the Mizar Mathematical Library into OMDoc format. Technical Report KWARC Report-01/11, Jacobs University Bremen, 2011.
- [18] M. Codescu, F. Horozal, M. Kohlhase, T. Mossakowski, and F. Rabe. A Proof Theoretic Interpretation of Model Theoretic Hiding. In *Workshop on Algebraic Development Techniques*, 2010.
- [19] M. Codescu, F. Horozal, M. Kohlhase, T. Mossakowski, F. Rabe, and K. Sojakova. Towards Logical Frameworks in the Heterogeneous Tool Set Hets. In *Workshop on Algebraic Development Techniques*, 2010.
- [20] C. David, M. Kohlhase, C. Lange, F. Rabe, and V. Zholudev. JOBAD/MMT – Interactive Mathematics. In A. Giurca, B. Endres-Niggemeyer, C. Lange, L. Maicher, and P. Hitzler, editors, *AI Mashup Challenge at ESWC*, 2010. see <http://sites.google.com/a/fh-hannover.de/aimashup/home/jobad>.
- [21] C. David, C. Lange, and F. Rabe. Interactive Documents as Interfaces to Computer Algebra Systems: JOBAD and Wolfram—Alpha. In D. Delahaye and R. Rioboo, editors, *CALCULEMUS (Emerging Trends)*, Technical Reports of CEDRIC (CNAM/ENSIIE), pages 13–30. Centre d’Étude et de Recherche en Informatique du CNAM (Cédric), 2010.
- [22] S. Dumbrava and F. Rabe. Structuring Theories with Partial Morphisms. In *Workshop on Algebraic Development Techniques*, 2010.
- [23] M. Kohlhase, C. Lange, C. Müller, N. Müller, and F. Rabe. Notations for Active Mathematical Documents. Technical Report 2009-1, Jacobs University Bremen, 2009.
- [24] M. Kohlhase and F. Rabe. Semantics of OpenMath and MathML 3. In *Proceedings of the OpenMath workshop*, 2009.
- [25] F. Rabe and M. Kohlhase. A Better Role System for OpenMath. In *Proceedings of the OpenMath workshop*, 2009.
- [26] C. Benz Müller, F. Rabe, C. Schürmann, and G. Sutcliffe. Evaluation of Systems for Higher-order Logic (ESHOL). In B. Konev, R. Schmidt, and S. Schulz, editors, *Workshop on Practical Aspects of Automated Reasoning at IJCAR 2008*, volume 373 of *CEUR Workshop Proceedings*, pages 22–23. CEUR-WS.org, 2008.
- [27] K. Sojakova and F. Rabe. Translating Dependently-Typed Logic to First-Order Logic. In A. Corradini and U. Montanari, editors, *Workshop on Algebraic Development Techniques*, 2008.
- [28] M. Kohlhase, C. Lange, and F. Rabe. Presenting Mathematical Content with Flexible Elisions. In *Proceedings of the OpenMath/JEM workshop*, 2007.
- [29] F. Rabe. OMDoc Theory Graphs Revisited. In *Proceedings of the OpenMath/JEM workshop*, 2007.
- [30] F. Rabe, S. Schlager, and P. Schmitt. A Sequent Calculus for a First-order Dynamic Logic with Trace Modalities for Promela⁺. In *Proceedings of the 17th Nordic Workshop on Programming Theory*, 2005.

5.9 Textbook-Style Lecture Notes

- [1] F. Rabe. *Lecture Notes on Algorithms and Data Structures*. 2017. see https://github.com/florian-rabe/Teaching/tree/master/AaDS_17.
- [2] F. Rabe. *Lecture Notes on Secure and Dependable Systems*. 2017. see https://github.com/florian-rabe/Teaching/tree/master/SaDS_17.
- [3] F. Rabe. *Integrated Lecture Notes on Logic (2008–2016)*. 2016. see https://github.com/florian-rabe/Teaching/blob/master/logic/notes_logic.pdf.

5.10 Selected Service Documents

- [1] F. Rabe. Advice for Students, 2018. see https://github.com/florian-rabe/Teaching/blob/master/general/advice_for_students.pdf.
- [2] F. Rabe. Advice for PC Chairs, 2011.