

FroCoS 2013

Frontiers of Combining Systems

Tableaux 2013

**Automated Reasoning with Analytic Tableaux
and Related Methods**

Loria, Nancy, France

September 16-20, 2013

Conference Schedules

Monday, 16 September 2013: Tableaux Workshops

Third Workshop of the Amadeus Project on Proof Compression

Room A006

Organizers:

- Pascal Fontaine (Inria Nancy - Grand-Est, Loria, U. de Lorraine)
- Bruno Woltzenlogel Paleo (Theory and Logic Group, Vienna University of Technology)

Workshop: Logics for Resources, Processes and Programs

Room B013

Organizers:

- Didier Galmiche (Loria - U. de Lorraine)
- David Pym (University of Aberdeen)

Programs can be obtained from the Tableaux Workshops web page:
<http://tableaux13.loria.fr/workshops.html>



Tuesday, 17 September 2013: Tableaux

08:55 - 09:00 Welcome

Tableaux Session 1 Chair: Dominique Larchey-Wendling

- 09:00 - 10:00 Keynote speaker: Tobias Nipkow
*A Brief Survey of Verified Decision Procedures for
Equivalence of Regular Expressions*
Joint work with Maximilian Haslbeck
- 10:00 - 10:30 Hendrik Tews
Formalizing Cut Elimination of Coalgebraic Logics in Coq

10:30 - 11:00 **Coffee break**

Tableaux Session 2 Chair: Neil Murray

- 11:00 - 11:30 Andreas Bauer, Peter Baumgartner, Martin Diller, and Michael Norrish
Tableaux for Verification of Data-Centric Processes
- 11:30 - 12:00 Tim French, John McCabe-Dansted, and Mark Reynolds
Model Checking General Linear Temporal Logic
- 12:00 - 12:30 Nicolas Peltier
Schemata of formulæ in the theory of arrays

12:30 - 14:00 **Lunch break**

Tableaux Session 3 Chair: Nicolas Peltier

- 14:00 - 14:30 Ulrich Furbach and Claudia Schon
Semantically Guided Evolution of SHI ABoxes
- 14:30 - 15:00 Mohammad Khodadadi, Renate A. Schmidt, and Dmitry Tishkovsky
*A Refined Tableau calculus with Controlled Blocking for the
Description Logic $SHOI$*
- 15:00 - 15:30 Ming Zuo and Volker Haarslev
Intelligent Tableaux Algorithm for DL Reasoning

15:30 - 16:00 **Coffee break**

Tableaux Session 4 Chair: Jens Otten

- 16:00 - 16:30 Christoph Röthlisberger
TAFa - A Tool for Admissibility in Finite Algebras
- 16:30 - 17:00 Davide Bresolin, Dario Della Monica, Angelo Montanari, and Guido Sciavicco
*A Tableau System for Right Propositional Neighborhood Logic
over Finite Linear Orders: An Implementation*

Social Program

- 18:15 - **Tableaux reception**
Aquarium de Nancy (Short visit followed by reception)

Wednesday, 18 September 2013: Tableaux

FroCoS Session 1, joint with Tableaux		Chair: Pascal Fontaine
09:00 - 10:00	Keynote speaker: Lawrence C. Paulson <i>MetiTarski's Menagerie of Cooperating Systems</i>	
10:00 - 10:30	Abdelkader Kersani and Nicolas Peltier FroCoS paper <i>Combining Superposition and Induction: A Practical Realization</i>	
10:30 - 11:00	Coffee break	

Tableaux tutorials

11:00 - 13:00	Sorin Stratulat <i>Room A006</i> <i>Noetherian Induction for First-Order Reasoning</i>
11:00 - 13:00	Dmitry Tishkovsky and Renate A. Schmidt <i>Room B013</i> <i>Generating Tableau Provers using MetTeL2</i>

13:00 - 14:00 **Lunch break**

Tableaux Session 5, joint with FroCoS		Chair: Dale Miller
14:00 - 15:00	Keynote speaker: Sara Negri <i>On the Duality of Proofs and Countermodels in Labelled Sequent Calculi</i>	
15:00 - 15:30	Zhé Hóu, Alwen Tiu, and Rajeev Goré Tableaux paper <i>A Labelled Sequent Calculus for BBI: Proof Theory and Proof Search</i>	
15:30 - 16:00	Coffee break	

Tableaux Session 6		Chair: Rajeev Goré
16:00 - 16:30	Stefan Hetzl, Tomer Libal, Martin Riener, and Mikheil Rukhaia <i>Understanding Resolution Proofs through Herbrand's Theorem</i>	
16:30 - 17:00	Björn Lellmann and Dirk Pattinson <i>Correspondence between Modal Hilbert Axioms and Sequent Rules with an Application to S5</i>	
17:00 - 17:30	Hidenori Kurokawa <i>Prefixed Tableau Systems for Logic of Proofs and Provability</i>	
17:30 - 18:00	Tableaux Business Meeting	

Social Program

19:00 -	FroCoS reception Musée Lorrain (Short visit followed by reception)
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Wednesday, 18 September 2013: FroCoS

08:55 - 09:00 Welcome

FroCoS Session 1, joint with Tableaux

Chair: Pascal Fontaine

09:00 - 10:00 Keynote speaker: Lawrence C. Paulson
MetiTarski's Menagerie of Cooperating Systems

10:00 - 10:30 Abdelkader Kersani and Nicolas Peltier
FroCoS paper *Combining Superposition and Induction: A Practical Realization*

10:30 - 11:00 **Coffee break**

FroCoS Session 2

Chair: Christophe Ringeissen

11:00 - 11:30 Francesco Alberti, Silvio Ghilardi, and Natasha Sharygina
Definability of Accelerated Relations in a Theory of Arrays and Its Applications

11:30 - 12:00 Clara Bertolissi and Silvio Ranise
Verification of Composed Array-based Systems with Applications to Security-Aware Workflows

12:00 - 12:30 Ralf Karrenberg, Marek Košta, and Thomas Sturm
Presburger Arithmetic in Memory Access Optimization for Data-Parallel Languages

12:30 - 14:00 **Lunch break**

Tableaux Session 5, joint with FroCoS

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14:00 - 15:00 Keynote speaker: Sara Negri
On the Duality of Proofs and Countermodels in Labelled Sequent Calculi

15:00 - 15:30 Zhé Hóu, Alwen Tiu, and Rajeev Goré
Tableaux paper *A Labelled Sequent Calculus for BBI: Proof Theory and Proof Search*

15:30 - 16:00 **Coffee break**

FroCoS Session 3

Chair: Roberto Sebastiani

16:00 - 16:30 Rafael Peñaloza and Tingting Zou
Roughening the \mathcal{EL} Envelope

16:30 - 17:00 Patrick Koopmann and Renate A. Schmidt
Uniform Interpolation of \mathcal{ALC} -Ontologies Using Fixpoints

17:00 - 17:30 Christoph Wernhard
Abduction in Logic Programming as Second-Order Quantifier Elimination

Social Program

19:00 - **FroCoS reception**
Musée Lorrain (Short visit followed by reception)

Thursday, 19 September 2013: Tableaux

FroCoS + Tableaux Joint Session

Chair: Silvio Ghilardi

- 09:00 - 10:00 Keynote speaker: Stéphane Demri
Witness Runs for Counter Machines
Joint work with Clark Barrett and Morgan Deters
- 10:00 - 10:30 Joseph Boudou and Bruno Woltzenlogel Paleo
Tableaux paper *Compression of Propositional Resolution Proofs by Lowering Subproofs*
- 10:30 - 11:00 **Coffee break**

Tableaux Session 7

Chair: Arild Waaler

- 11:00 - 11:30 Agata Ciabattoni, Paolo Maffezoli, and Lara Spendier
Hypersequent and Labelled Calculi for Intermediate Logics
- 11:30 - 12:00 Mauro Ferrari, Camillo Fiorentini, and Guido Fiorino
A Terminating Evaluation-Driven Variant of G3i
- 12:00 - 12:30 Stéphane Graham-Lengrand
Psyche: A Proof-Search Engine Based on Sequent Calculus with an LCF-Style Architecture

- 12:30 - 14:00 **Lunch break**

FroCoS Session 5, joint with Tableaux

Chair: Silvio Ranise

- 14:00 - 15:00 Keynote speaker: Joël Ouaknine
Specification and Verification of Linear Dynamical Systems: Advances and Challenges
- 15:00 - 15:30 Matthias Horbach and Viorica Sofronie-Stokkermans
FroCoS paper *Obtaining Finite Local Theory Axiomatizations via Saturation*
- 15:30 - 16:00 **Coffee break**

Tableaux Session 8

Chair: Nicola Olivetti

- 16:00 - 16:30 Nick Bezhanishvili and Silvio Ghilardi
Bounded Proofs and Step Frames
- 16:30 - 17:00 Carlos Areces and Ezequiel Orbe
Dealing with Symmetries in Modal Tableaux
- 17:00 - 17:30 Amélie David
TATL: Implementation of ATL Tableau-Based Decision Procedure

Social Program

- 19:30 - **Conference dinner**
Grand Hôtel de la Reine

Thursday, 19 September 2013: FroCoS

FroCoS + Tableaux Joint Session

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Joint work with Clark Barrett and Morgan Deters
- 10:00 - 10:30 Joseph Boudou and Bruno Woltzenlogel Paleo
Tableaux paper *Compression of Propositional Resolution Proofs by Lowering Subproofs*
- 10:30 - 11:00 **Coffee break**

FroCoS Session 4

Chair: Renate Schmidt

- 11:00 - 11:30 Philippe Balbiani and Szabolcs Mikulás
Decidability and Complexity via Mosaics of the Temporal Logic of the Lexicographic Products of Unbounded Dense Linear Orders
- 11:30 - 12:00 Stefan Borgwardt, Marcel Lippmann, and Veronika Thost
Temporal Query Answering in the Description Logic DL-Lite
- 12:00 - 12:30 Franz Baader and Benjamin Zarriß
Verification of Golog Programs over Description Logic Actions
- 12:30 - 13:00 **FroCoS Business Meeting**
- 12:30 - 14:00 **Lunch break**

FroCoS Session 5, joint with Tableaux

Chair: Silvio Ranise

- 14:00 - 15:00 Keynote speaker: Joël Ouaknine
Specification and Verification of Linear Dynamical Systems: Advances and Challenges
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FroCoS paper *Obtaining Finite Local Theory Axiomatizations via Saturation*
- 15:30 - 16:00 **Coffee break**

FroCoS Session 6

Chair: Christoph Weidenbach

- 16:00 - 16:30 Konstantin Korovin
Non-cyclic Sorts for First-Order Satisfiability
- 16:30 - 17:00 Guillaume Burel and Simon Cruanes
Detection of First Order Axiomatic Theories
- 17:00 - 17:30 Jasmin Christian Blanchette and Andrei Popescu
Mechanizing the Metatheory of Sledgehammer

Social Program

- 19:30 - **Conference dinner**
Grand Hôtel de la Reine

Friday, 18 September 2013: FroCoS

FroCoS Session 7

Chair: Peter Baumgartner

09:30 - 10:30 Keynote speaker: Konstantin Korovin
From Resolution and DPLL to Solving Arithmetic Constraints

10:30 - 11:00 **Coffee break**

FroCoS Session 8

Chair: Didier Galmiche

11:00 - 11:30 Carlos Areces, Raul Fervari, and Guillaume Hoffmann
Tableaux for Relation-Changing Modal Logics

11:30 - 12:00 Fabio Papacchini and Renate A. Schmidt
Computing Minimal Models Modulo Subset-Simulation for Modal Logics

12:00 - 12:30 Franz Baader, Oliver Fernández Gil, and Barbara Morawska
Hybrid Unification in the Description Logic \mathcal{EL}

12:30 - 14:00 **Lunch break**

FroCoS Session 9

Chair: Franz Baader

14:00 - 14:30 Takahito Aoto
Disproving Confluence of Term Rewriting Systems by Interpretation and Ordering

14:30 - 15:00 Christopher Bouchard, Kimberly A. Gero, Christopher Lynch,
and Paliath Narendran
On Forward Closure and the Finite Variant Property

15:00 - 15:30 Cynthia Kop and Naoki Nishida
Term Rewriting with Logical Constraints

15:30 - 16:00 **Coffee break**

FroCoS + Tableaux schedule overview

	Sep 16 Monday Tableaux Workshops	Sep 17 Tuesday Tableaux	Sep 18 Wednesday FroCoS + Tableaux	Sep 19 Thursday FroCoS + Tableaux	Sep 20 Friday FroCoS
09:00-09:30	Workshops Session 1	Tableaux S1	FroCoS S1, joint with Tableaux	Joint FroCoS + Tableaux	FroCoS starts at 9:30
09:30-10:00	Coffee	Tobias Nipkow +1 regular paper	Lawrence C. Paulson +1 regular paper	Stéphane Demiri +1 regular paper	Konstantin Korovin
10:00-10:30	Workshops Session 2	Coffee	Coffee	Coffee	Coffee
10:30-11:00	Lunch	Tableaux S2	Tableaux FroCoS S2	Tableaux S7	FroCoS S8
11:00-11:30	Workshops Session 3	Lunch	Tutorials until 13:00	FroCoS Business Meeting	Lunch
11:30-12:00	Coffee	Lunch	Lunch	Lunch	Lunch
12:00-12:30	Workshops Session 4	Tableaux S3	Tableaux S5, joint with FroCoS	FroCoS S5, joint with Tableaux	FroCoS S9
12:30-13:00	Workshops Session 1	Tableaux S4	Sara Negri +1 regular paper	Joël Ouaknine +1 regular paper	Coffee
13:00-13:30	Workshops Session 2	Coffee	Coffee	Coffee	Coffee
13:30-14:00	Workshops Session 3	Tableaux S6	Tableaux S6	Tableaux S8	
14:00-14:30	Workshops Session 4	Tableaux S7	Tableaux Business Meeting	FroCoS + Tableaux Dinner starting 19:30	
14:30-15:00	Workshops Session 1	Tableaux S8	Tableaux S6	FroCoS reception starting 19:00	
15:00-15:30	Workshops Session 2	Tableaux S9	Tableaux Business Meeting	Tableaux reception starting 18:15	
15:30-16:00	Workshops Session 3	Tableaux S10	Tableaux Business Meeting		
16:00-16:30	Workshops Session 4	Tableaux S11	Tableaux Business Meeting		
16:30-17:00	Workshops Session 1	Tableaux S12	Tableaux Business Meeting		
17:00-17:30	Workshops Session 2	Tableaux S13	Tableaux Business Meeting		
17:30-18:00	Workshops Session 3	Tableaux S14	Tableaux Business Meeting		

Color code:

- FroCoS event
- Tableaux event
- FroCoS + Tableaux event