

# **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 SHO $\mathcal{I}$*
- 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  
*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**

### Tableaux tutorials

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

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

### Tableaux Session 5, joint with FroCoS

Chair: Dale Miller

- 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**

### Tableaux Session 6

Chair: Rajeev Goré

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

### Social Program

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

## 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  
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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** Chair: Dale Miller

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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 Maffezioli, 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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- 09:00 - 10:00 Keynote speaker: Stéphane Demri  
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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

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

Color code:

FroCoS event
Tableaux event
FroCoS + Tableaux event