

ITP 2017 Programme

Tuesday, 26th September

Session 01

08:30 *Whitebox automation*
Leonardo de Moura

09:30 T01 *Effect polymorphism in higher-order logic (proof pearl)*
Andreas Lochbihler

10:00 T02 *Typing Total Recursive Functions in Coq*
Dominique Larchey-Wendling

10:30 **Coffee Break**

Chair César Muñoz

ITP Invited Talk

HO Logic and Type Theory

Session 02

11:00 T03 *How to Simulate It in Isabelle: Towards Formal Proof for Secure Multi-Party Computation*
David Butler, David Aspinall and Adrià Gascón

11:30 T04 *Schulze Voting as Evidence Carrying Computation*
Dirk Pattinson and Mukesh Tiwari

12:00 T05 *Certifying Standard and Stratified Datalog Inference Engines in SSReflect*
Stefania Dumbrava, Véronique Benzaken and Évelyne Contejean

12:30 **Lunch**

Chair H el ene Kirchner

Security

Session 03

14:00 *Tableau Calculus for Hybrid Xpath with Data*
Carlos Areces

15:00 T06 *Formal Verification of a Floating-Point Expansion Renormalization Algorithm*
Sylvie Boldo, Mioara Joldes, Jean-Michel Muller and Valentina Popescu

15:30 **Coffee Break**

Tableaux Invited Talk

Chair Lu s Cruz-Filipe
Programming Languages

Session 04

16:00 T07 *Verifying a Concurrent Garbage Collector using a Rely-Guarantee Methodology*
Yannick Zakowski, David Cachera, Delphine Demange, Gustavo Petri, David Pichardie, Suresh Jagannathan and Jan Vitek

16:30 T08 *A Verified Generational Garbage Collector for CakeML*
Adam Sandberg Ericsson, Magnus O. Myreen and Johannes  aman Pohjola

17:00 T09 *CompCertS: A Memory-Aware Verified C Compiler using Pointer as Integer Semantics*
Fr ed eric Besson, Sandrine Blazy and Pierre Wilke

17:30 T10 *Verified Spilling and Translation Validation with Repair*
Julian Rosemann, Sigurd Schneider and Sebastian Hack

Chair Andreas Lochbihler

Programming Languages

Wednesday, 27th September

Session 05

08:30 *The perimeter of decidability (with sequent calculi on the inside)*
Katalin Bimb o

Joint Tableaux/Frocos/ITP Invited Talk

09:30 T11 *Formalizing Basic Quaternionic Analysis*
Andrea Gabrielli and Marco Maggesi

10:00 T12 *A Formalization of Convex Polyhedra based on the Simplex Method*
Xavier Allamigeon and Ricardo D. Katz

Chair Adam Naumowicz
Formalization of Mathematics

10:30 **Coffee Break**

Session 06

Chair Mariano Moscato

Tactics

- 11:00 T13 *A Formal Proof of the Expressiveness of Deep Learning*
Alexander Bentkamp, Jasmin Christian Blanchette and Dietrich Klakow
- 11:30 T14 *A Formalisation of Consistent Consequence for Boolean Equation Systems*
Myrthe van Delft, Herman Geuvers and Tim Willemse
- 12:00 T15 *Proof Tactics for Assertions in Separation Logic*
Zhe Hou, David Sanan, Alwen Tiu and Yang Liu

12:30 **Lunch**

Session 07

Chair Amy Felty

- 14:00 Automating Formalization by Statistical and Semantic Parsing of Mathematics
Cezary Kaliszyk

Joint Tableaux/Frocos/ITP Inv. Talk

Tactics

- 15:00 T16 *Efficient Verified Checking of Propositional Proofs*
Marijn Heule, Warren Hunt, Matt Kaufmann and Nathan Wetzler

15:30 **Short Coffee Break**

15:45 Excursion

18:00 Dinner

Thursday, 28th September

Session 08

- 08:30 Revising System Specifications in Temporal Logic
Renata Wassermann

Frocos Invited Talk

09:30

Poster's Presentation

10:30 **Coffee Break**

Poster's Display

Session 09

Chair Florian Rabe

Theorem Proving Interoperability

- 11:20 T17 *FoCaLiZe and Dedukti to the Rescue for Proof Interoperability*
Raphaël Cauderlier and Catherine Dubois
- 11:50 T18 *Proof certificates in PVS (Rough Diamond)*
Frédéric Gilbert
- 12:10 T19 *How to Get More Out of Your Oracles (Rough Diamond)*
Luís Cruz-Filipe, Kim S. Larsen and Peter Schneider-Kamp

12:30 **Lunch**

Session 10

- 14:00 Foundational (Co)datatypes and (Co)recursion for Higher-Order Logic
Jasmin Blanchette

Joint Tableaux/Frocos/ITP Invited Talk

Chair David Aspinall

Theorem Proving Interoperability

- 15:00 T20 *Making PVS Accessible to Generic Services by Interpretation in a Universal Format*
Michael Kohlhase, Dennis Müller, Sam Owre and Florian Rabe

15:30 **Coffee Break**

Session 11

Chair Flávio de Moura

HO Logic and Type Theory

- 16:00 T21 *A Formalized General Theory of Syntax with Bindings*
Lorenzo Gheri and Andrei Popescu
- 16:30 T22 *Categoricity Results for Second-Order ZF in Dependent Type Theory*
Dominik Kirst and Gert Smolka
- 17:00 Business Meeting

Friday, 29th September

Session 12

Chair Mauricio Ayala-Rincón

08:30 *Automated Theory Exploration for Interactive Theorem Proving: An introduction to the Hipster system* ITP Invited Talk
Moa Johansson (Sponsored by the European Association for AI - EurAI)

HO Logic and Type Theory

09:30 T23 *Homotopy Type Theory in Lean*
Floris van Doorn, Jakob von Raumer and Ulrik Buchholtz

10:00 T24 *Weak Call-by-Value Lambda Calculus as a Model of Computation in Coq*
Yannick Forster and Gert Smolka

10:30 **Coffee Break**

Session 13

Chair Sam Owre

Engineering Applications

11:00 T25 *Formally Verified Safe Vertical Maneuvers for Non-Deterministic, Accelerating Aircraft Dynamics*
Yanni Kouskoulas, Daniel Genin, Aurora Schmidt and Jean-Baptiste Jeannin

11:30 T26 *Bellerophon: Tactical Theorem Proving for Hybrid Systems*
Nathan Fulton, Stefan Mitsch, Brandon Bohrer and André Platzer

12:00 T27 *A Formal Proof in Coq of LaSalle's Invariance Principle*
Cyril Cohen and Damien Rouhling

12:30 **Lunch**

Session 14

Frocos Invited Talk

14:00 *Designing Extensible Theory Solvers*
Cesare Tinelli

Chair Catherine Dubois
Formalization of Mathematics

15:00 T28 *Using Abstract Stobjs in ACL2 to Compute Matrix Normal Forms*
Laureano Lambán, Francisco-Jesus Martín-Mateos, Julio Rubio and José-Luis Ruiz-Reina

15:30 **Coffee Break**

Session 15

Chair José-Luis Ruiz-Reina
Formalization of Mathematics

16:00 T29 *Formalization of the Lindemann-Weierstrass theorem*
Sophie Bernard

16:30 T30 *Formalization of the fundamental group in untyped set theory using auto2*
Bohua Zhan

17:00 **Closing**

	Tuesday	Wednesday	Thursday	Friday
08:30	Inv.Talk ITP	Join Inv.Talk	Inv.Talk FroCoS	Inv.Talk ITP
09:00	L. de Moura	K. Bimbó	R. Wassermann	M. Johansson
09:30	Talk01	Talk11	Poster's	Talk23
10:00	Talk02	Talk12	Presentation	Talk24
10:30	Coffee Break			
11:00	Talk03	Talk13	Poster's	Talk17
11:30	Talk04	Talk14	Display	Talk18
12:00	Talk05	Talk15	Talk19	Talk27
12:30	Lunch			
14:00	Inv.Talk Tableaux	Join Inv.Talk	Joint Inv.Talk	Inv.Talk FroCoS
14:30	C. Areces	C. Kalizsky	J. Blanchette	C. Tinelli
15:00	Talk06	Talk16	Talk20	Talk 28
15:30	Coffee Break			
16:00	Talk07		Talk21	Talk 29
16:30	Talk08		Talk22	Talk 30
17:00	Talk09	Excursion	Business Meeting	Closing
17:30	Talk10			
18:00		Dinner		