

FroCoS/ITP/TABLEAUX 2025 programme

All times are Reykjavik time (=UTC). All sessions take place at Reykjavik University (Menntavegur 1, 102 Reykjavik)

Sat 27 Sept	Rocq - room M209	TABLEAUX - room M208
9-10:30	<p>Rocq 1 (9:00-10:40) Chair: Pierre Boutry</p> <p>Reynald Affeldt. An Overview of MathComp-Analysis and Its Applications (50 mins)</p> <p>Pierre-Emmanuel Wulfman. An Engineer's Self-Taught Journey with the Rocq Proof Assistant (25 mins) [online]</p> <p>Alexandre Jean. A Library for the Automated Transformation of Rocq AST (25 mins) [online]</p>	<p>TABLEAUX 1 Chair: Reiner Hähnle</p> <p>Jens Claßen and Torben Braüner. A Tableau System for First-Order Logic with Standard Names</p> <p>Tadeusz Litak and Katsuhiko Sano. Bounded Inquisitive Logics: Sequent Calculi and Schematic Validity</p> <p>Vitor Rodrigues Greatei, Sérgio Marcelino, Miguel Muñoz Pérez and Umberto Rivieccio. Analytic Calculi for Logics of Indicative Conditionals</p>
11-12:30	<p>Rocq 2 (11:05-12:30) Chair: Loïc Pujet</p> <p>Thibaut Benjamin. Generating Higher Identity Proofs in Homotopy Type Theory (25 mins) [online]</p> <p>Takafumi Saikawa, Kazunori Matsuda and Yosuke Tsuji. Formalization of Matching Numbers with finmap and mathcomp-classical</p> <p>Paolo Torrini and Benjamin Gregoire. Interaction Trees and Verified Compilation</p>	<p>TABLEAUX 2 Chair: Lutz Straßburger</p> <p>Agata Ciabatonni, Timo Lang and Revantha Ramanayake. Analytic Proofs for Tense Logic</p> <p>Rajeev Goré and Cormac Kikkert. Improved Decision Procedures for Multimodal Tense Logic Using CEGAR-Tableaux [online]</p> <p>Johannes Klobhofer, Valentina Trucco Dalmas and Yde Venema. Interpolation for Converse PDL</p>
14-15:30	<p>Rocq 3 (14:05-15:25) Chair: Alessandro Bruni</p> <p>Antoine Gontard. Automating Alignments of HOL Light Inductive Types and Recursive Functions in Rocq (25 mins) [online]</p> <p>Pierre Corbineau, Basile Gros and Jean-François Monin. Certified Programming with Dependent Types Made Simple with Proxy-Based Small Inversions</p> <p>Tomás Díaz, Kenji Maillard, Johann Rosain, Matthieu Sozeau, Nicolas Tabareau, Éric Tanter and Théo Winterhalter. Extending Sort Polymorphism with Elimination Constraints in Rocq (25 mins) [online]</p>	<p>TABLEAUX 3 Chair: Revantha Ramanayake</p> <p>Julia Butte and André Platzer. Semi-competitive Differential Game Logic</p> <p>Yil Buzoku and David Pym. Base-Extension Semantics for Intuitionistic Modal Logics</p> <p>Niels Voorneveld. Forward Proof Search for Intuitionistic Multimodal K Logics</p>
16-17:30	<p>Rocq 4 (16-17:45) Chair: Yannick Forster</p> <p>Théo Stoskopf, Jules Viot and Cyril Cohen. LLM4Docq: Bootstrapping Documentation for MathComp with LLMs and Expert Feedback (25 mins) [online]</p> <p>Max Ole Elliger and Tadeusz Litak. Can States Be Decidable in Inquisitive Mechanizations?</p> <p>Jules Viot, Guillaume Baudart, Emilio Jesus Gallego Arias and Marc Lelarge. MiniF2F in Rocq: Automatic Translation Between Proof Assistants: A Case Study (25 mins) [online]</p> <p>Christopher Mary. HotdocX & jsCoq: A Platform for Interactive, AI-Augmented and Monetizable Coq Experiences (25 mins) [online]</p>	<p>TABLEAUX 4 Chair: Matteo Acclavio</p> <p>Tiziano Dalmondo and Marianna Girlando. A Proof-Theoretic View of Basic Intuitionistic Conditional Logic</p> <p>Lide Grotenhuis and Bahareh Afshari. Intuitionistic mu-Calculus with the Lewis Arrow</p> <p>Sonia Marin and Paaras Padhiar. Justification Logic for Intuitionistic Modal Logic</p>
Sun 28 Sept	ITP - room M209	TABLEAUX - room M208
11-12:30	<p>ITP 1 Chair: Julie Cailler</p> <p>Hanna Lachnitt, Mathias Fleury, Haniel Barbosa, Andrew Reynolds, Jibiana Jakpor, Bruno Andreotti, Clark Barrett, Hans-Jörg Schurr, Cesare Tinelli. Improving the SMT Proof Reconstruction Pipeline in Isabelle/HOL</p> <p>Ghilaï Bergeron, Florent Krasnopol, Sophie Tourret. Formalizing Splitting in Isabelle/HOL</p> <p>Martin Desharnais, Jasmin Blanchette. Sledgehammering without ATPs (short paper 20 min)</p>	<p>TABLEAUX 5 Chair: Tarmo Uustalu</p> <p>Raheleh Jalali. Skolemization Beyond Intuitionistic Logic: The Role of Quantifier Shifts [online]</p> <p>Victor Barroso-Nascimento, Ekaterina Piotrovskaya and Elaine Pimentel. A Sequent Calculus Perspective on Base-Extension Semantics</p>
14-15:30	<p>ITP 2 Chair: René Thiemann</p> <p>Laura Titolo. Taming Floating-Point Rounding Errors with Proofs</p> <p>Robert Krebsers, Luko van der Maas, Enrico Tassi. Inductive Predicates via Least Fixpoints in Higher-Order Separation Logic</p>	<p>TABLEAUX 6 Chair: Anupam Das</p> <p>Kaustuv Chaudhuri, Arunava Gantait and Dale Miller. Designing a Safe Forward Chaining Tactic Using Productive Proofs</p> <p>Matteo Acclavio and Lutz Straßburger. Intuitionistic BV</p> <p>Niccolò Veltri and Cheng-Syuan Wan. An Agda Formalization of Nonassociative Lambek Calculus and Its Metatheory</p>
16-18	<p>ITP 3 Chair: Michael Norrish</p> <p>Burak Ekici, Tadayoshi Kamegai, Nobuko Yoshida. Formalising Subject Reduction and Progress for Multiparty Session Processes</p> <p>Elaine Li, Thomas Wies. Certified Implementability of Global Multiparty Protocols</p> <p>Magnus Myreen, Mario Carneiro. GOL in GOL in HOL: Verified Circuits in Conway's Game of Life</p> <p>Rafael Castro G. Silva, Laouen Fernet, Dmitry Traytel. Nondeterministic Asynchronous Dataflow in Isabelle/HOL</p>	<p>TABLEAUX 7 Chair: Niccolò Veltri</p> <p>Anupam Das and Abhishek De. Cyclic System for an Algebraic Theory of Alternating Parity Automata</p> <p>Niklas Heidler and Reiner Hähnle. A Sequent Calculus for Trace Formula Implication</p> <p>Clemens Eisenhofer, Theodor Seiser, Laura Kovács and Nikolaj Bjørner. On Solving String Equations via Powers and Parikh Images</p> <p>Business meeting</p>
Mon 29	ITP - room M110	TABLEAUX - room M115
9-10:30(20)	<p>ITP 4 Chair: Sophie Tourret</p> <p>Dohan Kim. An Isabelle/HOL Formalization of Semi-Thue and Conditional Semi-Thue Systems</p> <p>Reynald Affeldt, Alessandro Bruni, Cyril Cohen, Pierre Roux, Takafumi Saikawa. Formalizing Concentration Inequalities in Rocq: Infrastructure and Automation</p> <p>Nadeem Abdul Hamid. Towards Automating Permutation Proofs in Coq: A Reflexive Approach with Iterative Deepening Search (short paper, 20 mins)</p>	<p>TABLEAUX 8 Chair: Marianna Girlando</p> <p>Mauro Ferrari, Camillo Fiorentini and Ricardo Oscar Rodriguez. A Gödel Modal Logic over Witnessed Crisp Models</p> <p>Renato Leme, Carlos Olarte, Elaine Pimentel and Marcelo Esteban Coniglio. The Modal Cube Revisited: Semantics without Worlds</p> <p>Kiana Samadpour Motalebi, Renate A. Schmidt and Cláudia Nalon. Refined Tableau Systems for Some Modal Logics of Confluence [online]</p>
11-12:30	<p>ITP 5 Chair: Lawrence Paulson</p> <p>Jeremy Thibault, Joseph Lenormand, Catalin Hritcu. Nanopass Back-Translation of Call-Return Trees for Mechanized Secure Compilation Proofs</p> <p>Sage Binder, Eric Ren, Katherine Kosaian. Formalizing the Hidden Number Problem in Isabelle/HOL</p> <p>David Knothe, Oliver Bringmann. On Verifying Secret Control Flow Elimination</p>	<p>TABLEAUX 9 Chair: Carlos Olarte</p> <p>Borja Sierra Miranda, Sebastijan Horvat and Thomas Studer. Non-Wellfounded Proof Theory for Interpretability Logic</p> <p>Clemens Eisenhofer, Michael Rawson and Laura Kovács. Finding Connections via Satisfiability Solving</p> <p>Michael Rawson, Clemens Eisenhofer and Laura Kovács. Constraint learning for non-confluent proof search</p>
14-15	<p>ITP 6 Chair: Benedikt Ahrens</p> <p>Joshua M. Cohen. A Mechanized First-Order Theory of Algebraic Data Types with Pattern Matching</p> <p>David Castro Perez, Marco Paviotti, Michael Vollmer. Program Optimisations via Hylomorphisms for Extraction of Executable Code</p>	<p>TABLEAUX + FroCoS - room M209</p> <p>TABLEAUX + FroCoS Chair: Tarmo Uustalu</p> <p>Kaustuv Chaudhuri. Towards a Universal Interactive Theorem Proving Interface</p>
15:30-17	<p>ITP 7 Chair: Manuel Eberl</p> <p>Chun Tian, Michael Norrish. Mechanising Böhm Trees and $\lambda\eta$-Completeness</p> <p>Adrienne Lancelot, Beniamino Accattoli, Maxime Vemclegs. Barendregt's Theory of the Lambda-Calculus, Refreshed and Formalized</p> <p>Zhuo Chen, Johannes Áman Pohjola, Christine Rizkallah. A Verified Cost Model for Call-by-Push-Value</p>	<p>FroCoS 1 Chair: Elaine Pimentel</p> <p>Franz Baader and Filippo De Bortoli. The Expressive Power of Description Logics with Numerical Constraints over Restricted Classes of Models</p> <p>Francesco Kriegel. Reasoning in OWL 2 EL with Hierarchical Concrete Domains</p> <p>Christian Alrabbaa, Franz Baader, Raimund Dachselt, Alisa Kovtunova and Julián Méndez. The Concrete Evonne: Visualization Meets Concrete Domain Reasoning</p>
19-21:30	Conference dinner - Harpa, Restaurant Hnoss (Austurbakki 2, 101 Reykjavik)	

Tue 30 Sept ITP - room M209		FroCoS - room V109
9-10:30	<p>ITP 8 Chair: Yannick Forster</p> <p>Kathrin Stark. Autosubst: On Mechanising Binders in a General-Purpose Proof Assistant</p> <p>Jan van Brügge, Andrei Popescu, Dmitriy Traytel. Animating MRBNFs: Truly Modular Binding-Aware Datatypes in Isabelle/HOL</p>	<p>FroCoS 2 Chair: Christophe Ringeissen</p> <p>Daniel Ranalter, Cezary Kaliszyk, Florian Rabe and Geoff Sutcliffe. The Dependently Typed Higher-Order Form for the TPTP World</p> <p>Anela Lolic, Matthias Baaz and Mariami Gamsakhurdia. An Analytic Representation of the Semantics of First-Order S5</p> <p>Nicolas Peltier, Quentin Petitjean and Mihaela Sighireanu. Deciding Satisfiability for Overlaid Symbolic Heaps</p>
11-12:30	<p>ITP 9 Chair: Dmitriy Traytel</p> <p>Mohammad Abdulaziz, Thomas Ammer, Shriya Meenakshisundaram, Adem Rimpapa. A Formal Analysis of Algorithms for Matroids and Greedoids</p> <p>Emin Karayel, Seng Joe Watt, Derek Khu, Kuldeep S. Meel, Yong Kiam Tan. Verification of the CVM Algorithm with a Functional Probabilistic Invariant</p> <p>Manuel Eberl, Peter Lammich. Verifying an Efficient Algorithm for Computing Bernoulli Numbers</p>	<p>FroCoS 3 Chair: Carsten Fuhs</p> <p>Martin Avanzini and Akihisa Yamada. Weighted Rewriting</p> <p>Samuel Frontull, Manuel Meitinger and Georg Moser. Data-Driven Runtime Complexity Analysis</p> <p>Serdar Erbatur, Andrew M. Marshall, Paliath Narendran and Christophe Ringeissen. Graph Embedded Rewrite Systems: Combination and Undecidability Results</p>
14:30-16 (!)	<p>ITP - room M105</p> <p>ITP 10 Chair: Pierre Boutry</p> <p>Anshula Gandhi, Anand Rao Tadipatri, Timothy Gowers. Automatically Generalizing Proofs and Statements</p> <p>Chase Norman, Jeremy Avigad. Canonical for Automated Theorem Proving in Lean</p> <p>Johannes Tantow, Lukas Gerlach, Stephan Mennicke, Markus Krötzsch. Verifying Datalog Reasoning with Lean</p>	<p>FroCoS 4 Chair: René Thiemann</p> <p>Carsten Fuhs. Automated Static Program Analysis via Constrained Term Rewriting</p> <p>Naoki Nishida, Misaki Kojima and Yuto Nakamura. Difference of Constrained Patterns in Logically Constrained Term Rewrite Systems</p>
16:30-18 (!)	<p>ITP 11</p> <p>Business meeting</p> <p>Community meeting</p>	<p>FroCoS 5 Chair: Haniel Barbosa</p> <p>Tanguy Bozec and Jasmin Blanchette. Iterative Monomorphisation</p> <p>Colin Rothgang and Florian Rabe. Subtyping in Dependently-Typed Higher-Order Logic</p> <p>Claudia Schon. Context-Aware Clause Selection Using Symbol Name Meanings in Theorem Proving</p>
Wed 1 Oct ITP - room M105		FroCoS - room M115
9-10:30	<p>ITP 12 Chair: Maria Inés de Frutos-Fernández</p> <p>Eric Wang, Arohee Bhoja, Cayden Codel, Noah G. Singer. Algebra is Half the Battle: Verifying Presentations for Graded Unipotent Chevalley Groups</p> <p>Lawrence Paulson. Formalising New Mathematics in Isabelle: Diagonal Ramsey</p> <p>Peter Koepke. A Natural Language Formalization of Perfectoid Rings in Naproche</p>	<p>FroCoS 6 Chair: Guilherme Toledo</p> <p>Parosh Aziz Abdulla, Mohamed Faouzi Atig, Julie Cailler, Chencheng Liang and Philipp Rümmer. When GNNs Met a Word Equations Solver: Learning to Rank Equations</p> <p>Sören Möller, Florian Bruse and Martin Lange. A Finite Abstraction of Real-Valued Functions for Complete Reasoning about Influence</p> <p>Guilherme Toledo and Yoni Zohar. Number Theory Combination: Natural Density and SMT</p>
11-12:30	<p>ITP 13 Chair: Johan Commelin</p> <p>Antoine Chambert-Loir, Maria Inés de Frutos-Fernández. A Formalization of Divided Powers in Lean</p> <p>Jonas Bayer, Marco David. A Formal Proof of Complexity Bounds on Diophantine Equations</p> <p>Yves Bertot, Thomas Portet. Formally Verifying a Vertical Cell Decomposition Algorithm</p>	<p>FroCoS 7 Chair: Mathias Fleury</p> <p>Rodrigo Raya and Christophe Ringeissen. Polite Combination in Parametric Array Theories</p> <p>Benjamin Przybocki, Guilherme Toledo and Yoni Zohar. Shininess, Strong Politeness, and Unicorns</p> <p>Gabriele Masina and Roberto Sebastiani. Exploiting Partial-Assignment Enumeration in Optimization Modulo Theories</p>
14-15:30	<p>ITP 14 Chair: Loïc Pujet</p> <p>Arnoud van der Leer, Kobe Wullaert, Benedikt Ahrens. Scott's Representation Theorem and the Univalent Karoubi Envelope</p> <p>Stefania Damato, Thorsten Altenkirch, Axel Ljungström. Formalising Inductive and Coinductive Containers</p> <p>Mario Carneiro, Emily Riehl. Formalizing colimits in Cat</p>	<p>FroCoS 8 Chair: Kaustuv Chaudhuri</p> <p>Alessio Coltellacci and Stephan Merz. Checking Linear Integer Arithmetic Proofs in Lambdapi</p> <p>Alberto Griggio, Giulia Sindoni and Stefano Tonetta. Certifying rlive: A New Proof Strategy for Liveness Model Checking [online]</p> <p>Business meeting</p>
16-17:50	<p>ITP 15 Chair: Mohammad Abdulaziz</p> <p>Asta Halkjær From, Anders Schlichtkrull. Abstract, Compositional Consistency: Isabelle/-HOL Locales for Completeness à la Fitting</p> <p>Ekaterina Zhuchko, Hendrik Maarand, Margus Veanes, G. Ebner. Finiteness of Symbolic Derivatives in Lean</p> <p>Remi Desmartin, Omri Isac, Ekaterina Komendantskaya, Kathrin Stark, Grant Passmore, Guy Katz. A Certified Proof Checker for Deep Neural Network Verification in Imandra</p> <p>Eric Vin, Kyle Miller, Daniel J. Fremont. LeanLTL: A Unifying Framework for Linear Temporal Logics in Lean (short paper, 20 mins)</p>	
Thu 2 Oct Lean - room M117		
9-10:30	<p>Lean 1</p> <p>Joachim Breitner. Report from the FRO (60 mins)</p> <p>Jhet Chan. Gödel Mirror: A Paraconsistent Calculus Mechanized in Lean 4 (20 mins) [online]</p>	
11-12:30	<p>Lean 2</p> <p>Mauricio Barba da Costa. Automatic Geometry Theorem Proving Using Polynomial Elaboration (20 mins)</p> <p>Moritz Firsching. The Formal Conjectures Repo (20 mins) [online]</p> <p>Lukas Gerlach. Formalizing Possibly Infinite Trees of Finite Degree (20 mins)</p> <p>Yulu Pan. Verifying a Real-World Regex Implementation</p>	
14-15:30	<p>Lean 3</p> <p>Discussion session</p>	
16-17:30	<p>Lean 4</p> <p>Luc Duponcheel. Teaching Programming using Lean (20 mins)</p> <p>Jesse Alama. Euler's Polyhedron Formula à la Lean (20 mins)</p> <p>Jovan Gerbscheid. Generalized Rewriting (20 mins)</p> <p>Chase Norman. Canonical: Simplify, Monomorphize, Destruct</p>	