

# Preliminary programme

## FroCoS/ITP/TABLEAUX 2025 preliminary programme (19 Aug, may change)

| Sat 27 Sept | Rocq  | TABLEAUX   |
|-------------|---|--|
| 9-1030      | Rocq1   | Tbl1<br>Jens Claßen and Torben Braüner. A Tableau System for First-Order Logic with Standard Names<br>Tadeusz Litak and Katsuhiko Sano. Bounded Inquisitive Logics: Sequent Calculi and Schematic Validity<br>Vitor Rodrigues Greatei, Sérgio Marcelino, Miguel Muñoz Pérez and Umberto Rivieccio. Analytic calculi for logics of indicative conditionals  |
| 11-1230     | Rocq2   | Tbl2<br>Agata Ciabattoni, Timo Lang and Revantha Ramanayake. Analytic Proofs for Tense Logic<br>Rajeev Goré and Cormac Kikkert. Improved Decision Procedures for Multimodal Tense Logic Using CEGAR-Tableaux<br>Johannes Kloibhofer, Valentina Trucco Dalmas and Yde Venema. Interpolation for Converse PDL  |
| 14-1530     | Rocq3   | Tbl3<br>Julia Butte and André Platzer. Semi-competitive Differential Game Logic<br>Yil Buzoku and David Pym. Base-Extension Semantics for Intuitionistic Modal Logics<br>Niels Voornveld. Forward Proof Search for Intuitionistic Multimodal K Logics  |
| 16-1730     | Rocq4   | Tbl4<br>Tiziano Dalmonte and Marianna Girlando. A Proof-Theoretic View of Basic Intuitionistic Conditional Logic<br>Lide Grotenhuis and Bahareh Afshari. Intuitionistic mu-Calculus with the Lewis Arrow<br>Sonia Marin and Paaras Padhiar. Justification Logic for Intuitionistic Modal Logic   |
| Sun 28 Sept | ITP   | TABLEAUX   |
| 11-1230     | ITP1<br>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<br>Ghilain Bergeron, Florent Krasnopol, Sophie Tourret. Formalizing Splitting in Isabelle/HOL<br>Martin Deshamais, Jasmin Blanchette. Sledgehammering without ATPs (short paper 20 min)                        | Tbl5<br>Raheleh Jalali. Skolemization Beyond Intuitionistic Logic: The Role of Quantifier Shifts<br>Victor Barroso-Nascimento, Ekaterina Piotrovskaya and Elaine Pimentel. A Sequent Calculus Perspective on Base-Extension Semantics  |
| 14-1530     | ITP2<br>Laura Titolo. Taming Floating-Point Rounding Errors with Proofs<br>Robert Krebbers, Luko van der Maas, Enrico Tassi. Inductive Predicates via Least Fixpoints in Higher-Order Separation Logic  | Tbl6<br>Kautuv Chaudhuri, Arunava Gantait and Dale Miller. Designing a Safe Forward Chaining Tactic Using Productive Proofs<br>Matteo Acclavio and Lutz Straßburger. Intuitionistic BV<br>Niccolò Veltri and Cheng-Syuan Wan. An Agda Formalization of Nonassociative Lambek Calculus and Its Metatheory   |
| 16-18       | ITP3<br>Burak Ekici, Tadayoshi Kamegai, Nobuko Yoshida. Formalising Subject Reduction and Progress for Multiparty Session Processes<br>Eliane Li, Thomas Wies. Certified Implementability of Global Multiparty Protocols<br>Magnus Myreen, Mario Carneiro. GOL in GOL in HOL: Verified Circuits in Conway's Game of Life<br>Rafel Castro G. Silva, Laouen Fernet, Dmitriy Traytel. Nondeterministic Asynchronous Dataflow in Isabelle/HOL | Tbl7<br>Anupam Das and Abhishek De. Cyclic System for an Algebraic Theory of Alternating Parity Automata<br>Niklas Heidler and Reiner Hähnle. A Sequent Calculus for Trace Formula Implication<br>Clemens Eisenhofer, Theodor Seiser, Laura Kovács and Nikolaj Bjørner. On Solving String Equations via Powers and Parikh Images<br>Business meeting   |
| Mon 29 Sept | ITP   | TABLEAUX - FroCoS  |
| 9-1030      | ITP4<br>Dohan Kim. An Isabelle/HOL Formalization of Semi-Thue and Conditional Semi-Thue Systems<br>Reynald Affeldt, Alessandro Bruni, Cyril Cohen, Pierre Roux, Takafumi Saikawa. Formalizing Concentration Inequalities in Rocq: Infrastructure and Automation<br>Nadeem Abdul Hamid. Towards Automating Permutation Proofs in Coq: A Reflexive Approach with Iterative Deepening Search (short paper 20 min)                            | Tbl8<br>Mauro Ferrari, Camillo Fiorentini and Ricardo Oscar Rodriguez. A Gödel Modal Logic over Witnessed Crisp Models<br>Renato Leme, Carlos Olarte, Elaine Pimentel and Marcelo Esteban Coniglio. The Modal Cube Revisited: Semantics without Worlds<br>Kiana Samadpour Motalebi, Renate A. Schmidt and Cláudia Nalon. Refined Tableau Systems for Some Modal Logics of Confluence             |
| 11-1230     | ITP5<br>Jeremy Thibault, Joseph Lenormand, Catalin Hritcu. Nanopass Back-Translation of Call-Return Trees for Mechanized Secure Compilation Proofs<br>Sage Binder, Eric Ren, Katherine Kosaian. Formalizing the Hidden Number Problem in Isabelle/HOL<br>David Knothe, Oliver Bringmann. On Verifying Secret Control Flow Elimination   | Tbl9<br>Borja Sierra Miranda, Sebastijan Horvat and Thomas Studer. Non-Wellfounded Proof Theory for Interpretability Logic<br>Clemens Eisenhofer, Michael Rawson and Laura Kovács. Finding Connections via Satisfiability Solving<br>Michael Rawson, Clemens Eisenhofer and Laura Kovács. Constraint learning for non-confluent proof search   |
| 14-15       | ITP6<br>Joshua M. Cohen. A Mechanized First-Order Theory of Algebraic Data Types with Pattern Matching<br>David Castro Perez, Marco Paviotti, Michael Vollmer. Program Optimisations via Hylo-morphisms for Extraction of Executable Code   | Tbl+Fro joint session<br>Kautuv Chaudhuri. Towards a Universal Interactive Theorem Proving Interface   |
| 1530-17     | ITP7<br>Chun Tian, Michael Norrish. Mechanising Böhm Trees and $\lambda\eta$ -Completeness<br>Adrienne Lancelot, Beniamino Accattoli, Maxime Vemclegs. Barendregt's Theory of the Lambda-Calculus, Refreshed and Formalized<br>Zhao Chen, Johannes Aman Pohjola, Christine Rizkallah. A Verified Cost Model for Call-by-Push-Value  | Fro1<br>Franz Baader and Filippo De Bortoli. The Expressive Power of Description Logics with Numerical Constraints over Restricted Classes of Models<br>Francesco Kriegel. Reasoning in OWL 2 EL with Hierarchical Concrete Domains<br>Christian Alrabbaa, Franz Baader, Raimund Dachselt, Alisa Kovtunova and Julián Méndez. The Concrete Evonne: Visualization Meets Concrete Domain Reasoning |
| 19-2130     | Conference dinner   |  |

## Preliminary programme

| Tue 30 Sept |  | ITP   | FroCoS   |
|-------------|--|---|--|
| 9-1030      |  | <b>ITP8</b><br>Kathrin Stark. Autosubst: On Mechanising Binders in a General-Purpose Proof Assistant<br><br>Jan van Brügge, Andrei Popescu, Dmitriy Traytel. Animating MRBNFs: Truly Modular Binding-Aware Datatypes in Isabelle/HOL  | <b>Fro2</b><br>Colin Rothgang and Florian Rabe. Subtyping in Dependently-Typed Higher-Order Logic<br>Anela Lolic, Matthias Baaz and Mariami Gamsakhurdia. An Analytic Representation of the Semantics of First-Order S5<br>Nicolas Peltier, Quentin Petitjean and Mihaela Sighireanu. Deciding Satisfiability for Overlaid Symbolic Heaps  |
| 11-1230     |  | <b>ITP9</b><br>Mohammad Abdulaziz, Thomas Ammer, Shriya Meenakshisundaram, Adem Rimpapa. A Formal Analysis of Algorithms for Matroids and Greedoids<br>Emin Karayel, Seng Joe Watt, Derek Khu, Kuldeep S. Meel, Yong Kiam Tan. Verification of the CVM Algorithm with a Functional Probabilistic Invariant<br>Manuel Eberl, Peter Lammich. Verifying an Efficient Algorithm for Computing Bernoulli Numbers   | <b>Fro3</b><br>Martin Avanzini and Akihisa Yamada. Weighted Rewriting<br><br>Samuel Frontull, Manuel Meitinger and Georg Moser. Data-Driven Runtime Complexity Analysis<br>Serdar Erbatur, Andrew M. Marshall, Paliath Narendran and Christophe Ringeissen. Graph Embedded Rewrite Systems: Combination and Undecidability Results   |
| 14-1530     |  | <b>ITP10</b><br>Anshula Gandhi, Anand Rao Tadipatri, Timothy Gowers. Automatically Generalizing Proofs and Statements<br>Chase Norman, Jeremy Avigad. Canonical for Automated Theorem Proving in Lean<br>Johannes Tantow, Lukas Gerlach, Stephan Mennicke, Markus Krötzsch. Verifying Datalog Reasoning with Lean   | <b>Fro4</b><br>Carsten Fuhs. Automated Static Program Analysis via Constrained Term Rewriting<br><br>Naoki Nishida, Misaki Kojima and Yuto Nakamura. Difference of Constrained Patterns in Logically Constrained Term Rewrite Systems  |
| 16-1730     |  | <b>ITP11</b><br>Business meeting<br>Community meeting   | <b>Fro5</b><br>Tanguy Bozec and Jasmin Blanchette. Iterative Monomorphisation<br>Daniel Ranalter, Cezary Kaliszyk, Florian Rabe and Geoff Sutcliffe. The Dependently Typed Higher-Order Form for the TPTP World<br>Claudia Schon. Context-Aware Clause Selection Using Symbol Name Meanings in Theorem Proving   |
| Wed 1 Oct   |  | ITP   | FroCoS   |
| 9-1030      |  | <b>ITP12</b><br>Eric Wang, Arohee Bhoja, Cayden Codel, Noah G. Singer. Algebra is Half the Battle: Verifying Presentations for Graded Unipotent Chevalley Groups<br><br>Lawrence Paulson. Formalising New Mathematics in Isabelle: Diagonal Ramsey<br>Peter Koepke. A Natural Language Formalization of Perfectoid Rings in Naproche  | <b>Fro6</b><br>Parosh Aziz Abdulla, Mohamed Faouzi Atig, Julie Cailler, Chencheng Liang and Philipp Rümmer. When GNNs Met a Word Equations Solver: Learning to Rank Equations<br>Sören Möller, Florian Bruse and Martin Lange. A Finite Abstraction of Real-Valued Functions for Complete Reasoning about Influence<br>Guilherme Toledo and Yoni Zohar. Number Theory Combination: Natural Density and SMT |
| 11-1230     |  | <b>ITP13</b><br>Antoine Chambert-Loir, María Inés de Frutos-Fernández. A Formalization of Divided Powers in Lean<br>Jonas Bayer, Marco David. A Formal Proof of Complexity Bounds on Diophantine Equations<br>Yves Bertot, Thomas Portet. Formally Verifying a Vertical Cell Decomposition Algorithm  | <b>Fro7</b><br>Rodrigo Raya and Christophe Ringeissen. Polite Combination in Parametric Array Theories<br>Benjamin Przybicki, Guilherme Toledo and Yoni Zohar. Refining the many-sorted equivalence of shiny and strongly polite theories<br>Gabriele Masina and Roberto Sebastiani. Exploiting Partial-Assignment Enumeration in Optimization Modulo Theories   |
| 14-1530     |  | <b>ITP14</b><br>Arnoud van der Leer, Kobe Wullaert, Benedikt Ahrens. Scott's Representation Theorem and the Univalent Karoubi Envelope<br>Stefania Damato, Thorsten Altenkirch, Axel Ljungström. Formalising Inductive and Coinductive Containers<br>Mario Carneiro, Emily Riehl. Formalizing colimits in Cat   | <b>Fro8</b><br>Alessio Coltellacci and Stephan Merz. Checking Linear Integer Arithmetic Proofs in Lambdapi<br>Alberto Griggio, Giulia Sindoni and Stefano Tonetta. Certifying rlive: a New Proof Strategy for Liveness Model Checking<br>Business meeting  |
| 16-1730     |  | <b>ITP15</b><br>Asta Halkjær From, Anders Schlichtkrull. Abstract, Compositional Consistency: Isabelle/HOL Locales for Completeness à la Fitting<br>Ekaterina Zhuchko, Hendrik Maarand, Margus Veanes, G. Ebner. Finiteness of Symbolic Derivatives in Lean<br>Remi Desmartin, Omri Isac, Ekaterina Komendantskaya, Kathrin Stark, Grant Passmore, Guy Katz. A Certified Proof Checker for Deep Neural Network Verification in Imandra<br>Eric Vin, Kyle Miller, Daniel J. Fremont. LeanLTL: A unifying framework for linear temporal logics in Lean (short paper 20 min) |  |
| Thu 2 Oct   |  | Lean  |  |
| 9-1030      |  | Lean1   |  |
| 11-1230     |  | Lean2   |  |
| 14-1530     |  | Lean3   |  |
| 16-1730     |  | Lean4   |  |