

**22nd International Conference on  
Automated Deduction (CADE-22)**

McGill University, Montreal, Canada

**Conference Schedule**

# CADE-22 Conference Schedule

Tuesday, August 4

- 08:55–9:00** **Welcome**  
*Brigitte Pientka (Conference Chair)*
- 09:00–10:00** **Session 1: Invited Talk** Chair: Aaron Stump  
Integrated Reasoning and Proof Choice Point Selection in the Jahob System: Mechanisms for Program Survival  
*Martin Rinard*
- 10:00–10:30** **Coffee Break**
- 10:30–12:30** **Session 2: Combinations and Extensions** Chair: Nikolaj Bjørner
- 10:30 Superposition and Model Evolution Combined  
*Peter Baumgartner and Uwe Waldmann*
- 11:00 On Deciding Satisfiability by DPLL( $\Gamma + \mathcal{T}$ ) and Unsound Theorem Proving  
*Maria Paola Bonacina, Christopher Lynch and Leonardo de Moura*
- 11:30 Combinable Extensions of Abelian Groups  
*Enrica Nicolini, Christophe Ringeissen and Michaël Rusinowitch*
- 12:00 Locality Results for Certain Extensions of Theories with Bridging Functions  
*Viorica Sofronie-Stokkermans*
- 12:30–14:00** **Catered Lunch**
- 14:00–15:30** **Session 3: Minimal Unsatisfiability and Automated Reasoning Support** Chair: Carsten Schürmann
- 14:00 Axiom Pinpointing in Lightweight Description Logics via Horn-SAT Encoding and Conflict Analysis  
*Roberto Sebastiani and Michele Vescovi*
- 14:30 Does this Set of Clauses Overlap with at least one MUS?  
*Éric Grégoire, Bertrand Mazure and Cédric Piette*
- 15:00 Progress in the Development of Automated Theorem Proving for Higher-Order Logic  
*Geoff Sutcliffe, Christoph Benzmüller, Chad E. Brown and Frank Theiss*
- 15:30–16:00** **Coffee Break**
- 16:00–17:40** **Session 4: System Descriptions** Chair: Peter Baumgartner
- 16:00 System Description: H-PILoT  
*Carsten Ihlemann and Viorica Sofronie-Stokkermans*
- 16:20 SPASS Version 3:5  
*Christoph Weidenbach, Dilyana Dimova, Arnaud Fietzke, Rohit Kumar, Martin Suda and Patrick Wischnowski*
- 16:40 DEI: A Theorem Prover for Terms with Integer Exponents  
*Hicham Bensaid, Ricardo Caferra and Nicolas Peltier*
- 17:00 veriT: An Open, Trustable and Efficient SMT-Solver  
*Thomas Bouton, Diego Caminha B. de Oliveira, David Déharbe and Pascal Fontaine*
- 17:20 Divvy: An ATP Meta-system Based on Axiom Relevance Ordering  
*Alex Roederer, Yury Puzis and Geoff Sutcliffe*
- 17:40–17:50** **Handover of Festschrift to Peter B. Andrews**  
*Christoph Benzmüller (Co-Editor)*
- 17:50–19:00** **CADE Business Meeting**  
*Reiner Hähnle (Vice-President)*

**Wednesday, August 5**

**09:00–10:00 Session 5: Invited Talk** Chair: Cesare Tinelli  
Instantiation-Based Automated Reasoning: From Theory to Practice  
*Konstantin Korovin*

**10:00–10:30 Coffee Break**

**10:30–12:30 Session 6: Interpolation and Predicate Abstraction**  
Chair: Maria Paola Bonacina

10:30 Interpolant Generation for UTVPI  
*Alessandro Cimatti, Alberto Griggio and Roberto Sebastiani*

11:00 Ground Interpolation for Combined Theories  
*Amit Goel, Sava Krstić and Cesare Tinelli*

11:30 Interpolation and Symbol Elimination  
*Laura Kovács and Andrei Voronkov*

12:00 Complexity and Algorithms for Monomial and Clausal Predicate Abstraction  
*Shuvendu K. Lahiri and Shaz Qadeer*

**12:30–14:00 Catered Lunch**

**14:00–15:30 Session 7: Resolution-Based Systems for Non-classical Logics**  
Chair: Hans de Nivelle

14:00 Efficient Intuitionistic Theorem Proving with the Polarized Inverse Method  
*Sean McLaughlin and Frank Pfenning*

14:30 A Refined Resolution Calculus for CTL  
*Lan Zhang, Ulrich Hustadt and Clare Dixon*

15:00 Fair Derivations in Monodic Temporal Reasoning  
*Michel Ludwig and Ulrich Hustadt*

**15:30–16:00 Coffee Break**

**16:00–17:00 Session 8: Termination Analysis and Constraint Solving**  
Chair: Christopher Lynch

16:00 A Term Rewriting Approach to the Automated Termination Analysis of Imperative Programs  
*Stephan Falke and Deepak Kapur*

16:30 Solving Non-linear Polynomial Arithmetic via SAT Modulo Linear Arithmetic  
*Cristina Borralleras, Salvador Lucas, Rafael Navarro-Marset, Enric Rodríguez-Carbonell and Albert Rubio*

**17:00–18:00 Presentation of the Herbrand Award to Deepak Kapur**  
*Reiner Hähnle (Master of Ceremony)*

**Thursday, August 6**

- 09:00–10:00** **Session 9: Invited Talk** Chair: Geoff Sutcliffe  
Building Theorem Provers  
*Mark E. Stickel*
- 10:00–10:30** **Coffee Break**
- 10:30–12:30** **Session 10: Rewriting, Termination and Productivity**  
Chair: Christoph Weidenbach
- 10:30 Termination Analysis by Dependency Pairs and Inductive Theorem Proving  
*Stephan Swiderski, Michael Parting, Jürgen Giesl, Carsten Fuhs and Peter Schneider-Kamp*
- 11:00 Beyond Dependency Graphs  
*Martin Korp and Aart Middeldorp*
- 11:30 Computing Knowledge in Security Protocols under Convergent Equational Theories  
*Ștefan Ciobâcă, Stéphanie Delaune and Steve Kremer*
- 12:00 Complexity of Fractran and Productivity  
*Jörg Endrullis, Clemens Grabmayer and Dimitri Hendriks*
- 12:30–14:00** **Catered Lunch**
- 14:00–** **Excursion and Banquet**

## Friday, August 7

- 09:00–10:00 Session 11: Models** Chair: Albert Oliveras
- 09:00 Automated Inference of Finite Unsatisfiability  
*Koen Claessen and Ann Lillieström*
  - 09:30 Decidability Results for Saturation-Based Model Building  
*Matthias Horbach and Christoph Weidenbach*
- 10:00–10:30 Coffee Break**
- 10:30–11:30 Session 12: Modal Tableaux with Global Caching** Chair: Ullrich Hustadt
- 10:30 A Tableau Calculus for Regular Grammar Logics with Converse  
*Linh Anh Nguyen and Andrzej Szalas*
  - 11:00 An Optimal On-the-fly Tableau-Based Decision Procedure for PDL-Satisfiability  
*Rajeev Goré and Florian Widmann*
- 11:30–12:30 Session System Competition Results** Chair: Renate Schmidt
- 11:30 CASC: The CADE ATP System Competition  
*Geoff Sutcliffe*
  - 12:00 SMT-COMP: Satisfiability Modulo Theories Competition  
*Albert Oliveras*
- 12:30–14:00 Catered Lunch**
- 14:00–15:30 Session 13: Arithmetic** Chair: Reiner Hähnle
- 14:00 Volume Computation for Boolean Combination of Linear Arithmetic Constraints  
*Feifei Ma, Sheng Liu and Jian Zhang*
  - 14:30 A Generalization of Semenov’s Theorem to Automata over Real Numbers  
*Bernard Boigelot, Julien Brusten and Jérôme Leroux*
  - 15:00 Real World Verification  
*André Platzer, Jan-David Quesel and Philipp Rümmer*
- 15:30–16:00 Coffee Break**