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(Γ + 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 Wischnewski
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, Ullrich Hustadt and Clare Dixon*

15:00 Fair Derivations in Monodic Temporal Reasoning
*Michel Ludwig and Ullrich 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  
*Ştefan 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 Szałas

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