Schedule Dagstuhl Seminar 26431

subject to change, last updated 22/10/2026 12:00pm GMT

Monday - Introduction and overview talks

09:00 - 10:00	Introduction, including introduction of participants
10:00 - 10:45	**Mohab Safey El Din** [Chair Hoon Hong]: *Symbolic computation and computer algebra: from decidability to exact computing*
10:45 - 11:15	**Coffee break**
11:15 - 12:00	**Pascal Fontaine** [Chair James Davenport]: *A crash course on SMT solving*
12:15 - 14:00	**Lunch**
14:00 - 14:30	**Ahmed Irfan** [Chair Dmitry Chistikov]: *What MCSat Can Learn from Thirty Years of SAT Heuristics: The Case of Nonlinear Arithmetic*
14:30 - 15:00	**Ruzica Piskac** [Chair Dmitry Chistikov]: *Using an extension of Linear Integer Arithmetic to reason about SQL queries*
15:00 - 15:30	**Coffee break**
15:30 - 16:15	**Philipp Hieronymi** [Chair Manuel Bodirsky]: *Logical aspects of arithmetic: Automata, decidability, and automated theorem proving*
16:15 - 17:00	**Ambros Gleixner** [Chair Matthias Köppe]: *Numerics and Certificates in Mixed Integer Linear Programming*
17:00 - 17:45	Introductions for late arrivals, discussion of break-out sessions

Tuesday - Tools

09:00 - 09:10	**Anna Maria Bigatti** [Chair until 10:35: Erika Abraham] *CoCoA (Computations in Commutative Algebra) and SC^2*
09:10 - 09:20	**Chris Brown** *QepcadB and Tarski - Computing with Tarski Formulas*
09:20 - 09:35	**Jürgen Gerhard** *Logic and Computer Algebra in Maple*
09:35 - 09:45	**John Abbot** *The OSCAR computer algebra system*
09:45 - 09:55	**Ambros Gleixner** *SCIP: Solving Constraint Integer Programs*
09:55 - 10:05	**Andreas Paffenholz** *polymake - Reasoning in polyhedral geometry*
10:05 - 10:15	**Tobias Grosser** *VeIR and Lean BitVector Procedures*
10:15 - 10:25	**Michal Hecko** *Amaya*
10:25 - 10:35	**Sven Verdoolaege** *An Overview of the Integer Set Library*
10:35 - 11:00	**Coffee break**
	Chair: **Alessio Mansutti**
11:00 - 11:10	**Nikolaj Bjorner** [Chair until 12:00: Alessio Mansutti] *Integration and applications of arithmetic solvers in Z3*
11:10 - 11:20	**Haniel Barbosa** *Proof Production and Reconstruction for Univariate Cylindrical Algebraic Coverings*
11:20 - 11:30	**Pascal Fontaine** *veriT and modulariT*
11:30 - 11:40	**Jasper Nalbach** *SMT-RAT: Satisfiability-Modulo-Theories Real Algebra Toolbox*
11:40 - 11:50	**Kyungmin Bae** *SLTmc*
11:50 - 12:00	**Jürgen Giesl** *AProVE, KoAT, and LoAT*
12:15 - 14:00	**Lunch**
14:00 - 15:00	Vote on tool-related topics and breakout sessions
15:00 - 15:30	**Coffee break**
15:30 - 16:30	Tool demos
16:30 - 18:00	Panel discussion on Tools [Chair: Matthias Köppe] A. **Bigatti**, D. **Fernandez Pons**, H. **Barbosa**, J. **Giesl**, J. **Gerhard**

Wednesday - Specialized topics and break-out sessions

09:00 - 10:30	**Chris Brown** [Chair until 10:30: Mohab Safey El Din] *Cylindrical Algebraic Decomposition: An Introduction* **James Davenport** *SMT and Computer Algebra: similarities, differences and lessons* **Hoon Hong** *Numerical Filter for Satisfiability of Polynomial Inequalities*
10:30 - 11:00	**Coffee break**
11:00 - 11:05	Introduction of late arrivals
11:05 - 12:00	Break-out session
12:15 - 13:30	**Lunch**
13:30 - 17:45	Walking tour (meet at **13:30** outside at entrance, earlier return possible) We will walk together from Schloss Dagstuhl to Stausee Noswendel: https://maps.app.goo.gl/XwmpVdx5d78aXYFB9 ~~We will then have coffee and cake at Seehaus.~~ The group can then separate. One group will return to Dagstuhl via the same route. The other group will join the hiking path *Wa4* (counter-clockwise) to go back to Dagstuhl: https://mapy.com/en/turisticka?source=osm&id=1080813966&ds=1&x=6.8990278&y=49.5210575&z=14 Taking this hiking path requires good footwear and motivation to overcome some elevation.

Thursday - Specialized topics and break-out sessions

09:00 - 09:30	**Manuel Bodirsky** [Chair until 10:30: Georg Zetzsche] *Complexity of Constraint Satisfaction Problems over Numeric Domains*
09:30 - 10:00	**Émilie Charlier** *Linear numeration systems: first-order logic and regularity*
10:00 - 10:30	**Laura Ciobanu** *Word equations with constraints in groups and semigroups*
10:30 - 11:00	**Coffee break**
11:00 - 12:00	Break-out session
12:15 - 13:45	Lunch
13:45 - 14:00	The group photo
14:00 - 14:30	**Akshay Gupte** [Chair until 15:30: Christoph Haase] *Lower bounds in optimization from algebraic relaxations and combinatorial parameters: study of expansion ratios of graphs*
14:30 - 15:00	**Ali Uncu** *Quantifier Elimination for Normal Cone Computations*
15:00 - 15:30	**Tobias Grosser** *BitVectors: Width-Generic Decision Procedures -- How far can we push this?*
15:30 - 16:00	**Coffee break**
16:00 - 17:30	Breakout session
17:30 - 18:00	Reports from breakout sessions

Friday - Outlook

09:00 - 10:30	Breakout session or plenary discussion
10:30 - 12:00	Discussion and future plans