13th International Satisfiability Modulo Theories Competition

SMT-COMP 2018

Matthias Heizmann   Aina Niemetz
Giles Reger   Tjark Weber
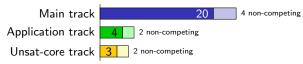
Background

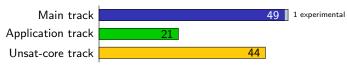SMT-COMP is an annual competition between SMT solvers. It was first held in 2005.

Satisfiability Modulo Theories =

propositional satisfiability + background theories (+ quantifiers)

Solvers, Logics, and Benchmarks

- 17 teams participated

- Solvers:

Main track	20 4 non-competing
Application track	4 2 non-competing
Unsat-core track	3 2 non-competing

- Logics:

Main track	49 1 experimental
Application track	21
Unsat-core track	44

- Benchmarks:

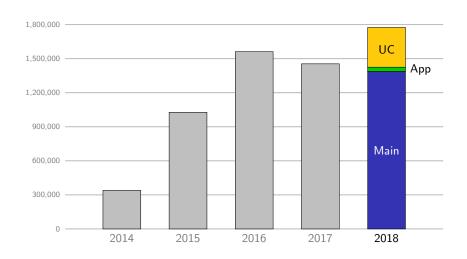|	
Main track	333241
Application track	9257
Unsat-core track	130705

Job Pairs

1,776,062 job pairs ($+$ some repeats); over 11 years of processor time

Selected Results

Unsat-Core Track

- 3 competing solvers: CVC4, SMTInterpol, Yices-2.6.0
- 16 competitive divisions (out of 44)

Solver	Divisions won
CVC4	QF_AUFLIA, QF_IDL, QF_LIRA, QF_RDL, QF_UF
SMTInterpol	QF_LIA, QF_LRA, QF_UFLIA
Yices-2.6.0	QF_ABV, QF_ALIA, QF_AUFBV, QF_AX, QF_BV, QF_UFBV, QF_UFIDL, QF_UFLRA

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Yices-2.6.0	QF_ABV, QF_ALIA, QF_AUFBV, QF_AX, QF_BV, QF_UFBV, QF_UFIDL, QF_UFLRA

Application Track

- 4 competing solvers: Boolector, CVC4, SMTInterpol, Yices-2.6.0
- 12 competitive divisions (out of 21)

Solver	Divisions won
Boolector	QF_ABV, QF_UFBV
CVC4	QF_NIA, QF_UFNIA
SMTInterpol	QF_ALIA, QF_UFLIA
Yices-2.6.0	QF_AUFBV, QF_AUFLIA, QF_BV, QF_LIA, QF_LRA, QF_UFLRA

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- 4 competing solvers: Boolector, CVC4, SMTInterpol, Yices-2.6.0
- 12 competitive divisions (out of 21)

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Boolector	QF_ABV, QF_UFBV
CVC4	QF_NIA, QF_UFNIA
SMTInterpol	QF_ALIA, QF_UFLIA
Yices-2.6.0	QF_AUFBV, QF_AUFLIA, QF_BV, QF_LIA, QF_LRA, QF_UFLRA

Main Track

- 20 competing solvers
- 41 competitive divisions (out of 50)

Solver	Divisions won
Boolector	QF_ABV, QF_BV^{seq}, QF_UFBV
COLIBRI	QF_FP
CVC4	ALIA, AUFDTLIA, AUFLIA, AUFLIRA, AUFNIRA, BV, LIA, LRA, NIA, QF_ABVFP, QF_AUFBV, QF_BVFP, QF_LRA, QF_NIA, UF^{seq}, UFDT, UFDTLIA, UFIDL, UFLIA, UFLRA
Minkeyrink-MT	QF_BV^{par}
SMTRAT	QF_NIRA
SPASS-SATT	QF_LIA
Vampire	NRA, UF^{par}, UFNIA
Yices-2.6.0	QF_ALIA, QF_AUFLIA, QF_AX, QF_IDL, QF_LIRA, QF_NRA, QF_RDL, QF_UF, QF_UFIDL, QF_UFLIA, QF_UFLRA, QF_UFNIA, QF_UFNRA

Main Track

- ▶ 20 competing solvers
- ▶ 41 competitive divisions (out of 50)

Solver	Divisions won
Boolector	QF_ABV, QF_BV^{seq}, BV
COLIBRI	QF_FP
CVC4	ALIA, AUFDTLIA, AUFLIA, AUFLIRA, AUFNIRA, BV, LIA, LRA, NIA, QF_ABVFP, QF_AUFBV, QF_BVFP, QF_LRA, QF_NIA, UF^{seq}, UFDT, UFDTLIA, UFIDL, UFLIA, UFLRA
Minkeyrink-MT	QF_BV^{par}
SMTRAT	QF_NIRA
SPASS-SATT	QF_LIA
Vampire	NRA, UF^{par}, UFNIA
Yices-2.6.0	QF_ALIA, QF_AUFLIA, QF_AX, QF_IDL, QF_LIRA, QF_NRA, QF_RDL, QF_UF, QF_UFIDL, QF_UFLIA, QF_UFLRA, QF_UFNIA, QF_UFNRA

Main Track: Competition-Wide Scoring

Rank	Solver	Score (sequential)	Score (parallel)

Best newcomer:

7	SPASS-SATT	14.81	14.81

Main Track: Competition-Wide Scoring

Rank	Solver	Score (sequential)	Score (parallel)
3	SMTInterpol	65.32	65.38

Best newcomer:

| 7 | SPASS-SATT | 14.81 | 14.81 |

Main Track: Competition-Wide Scoring

Rank	Solver	Score (sequential)	Score (parallel)
2	Yices-2.6.0	115.26	115.26
3	SMTInterpol	65.32	65.38

Best newcomer:

| 7 | SPASS-SATT | 14.81 | 14.81 |

Main Track: Competition-Wide Scoring

Rank	Solver	Score (sequential)	Score (parallel)
	Z3	186.19	186.19
2	Yices-2.6.0	115.26	115.26
3	SMTInterpol	65.32	65.38

Best newcomer:

| 7 | SPASS-SATT | 14.81 | 14.81 |

Main Track: Competition-Wide Scoring

Rank	Solver	Score (sequential)	Score (parallel)
1	CVC4	211.99	211.99
	Z3	186.19	186.19
2	Yices-2.6.0	115.26	115.26
3	SMTInterpol	65.32	65.38

Best newcomer:

7	SPASS-SATT	14.81	14.81

Main Track: Competition-Wide Scoring

Rank	Solver	Score (sequential)	Score (parallel)
1	CVC4	211.99	211.99
2	Yices-2.6.0	115.26	115.26
3	SMTInterpol	65.32	65.38

Best newcomer:

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