

Dirk Beyer

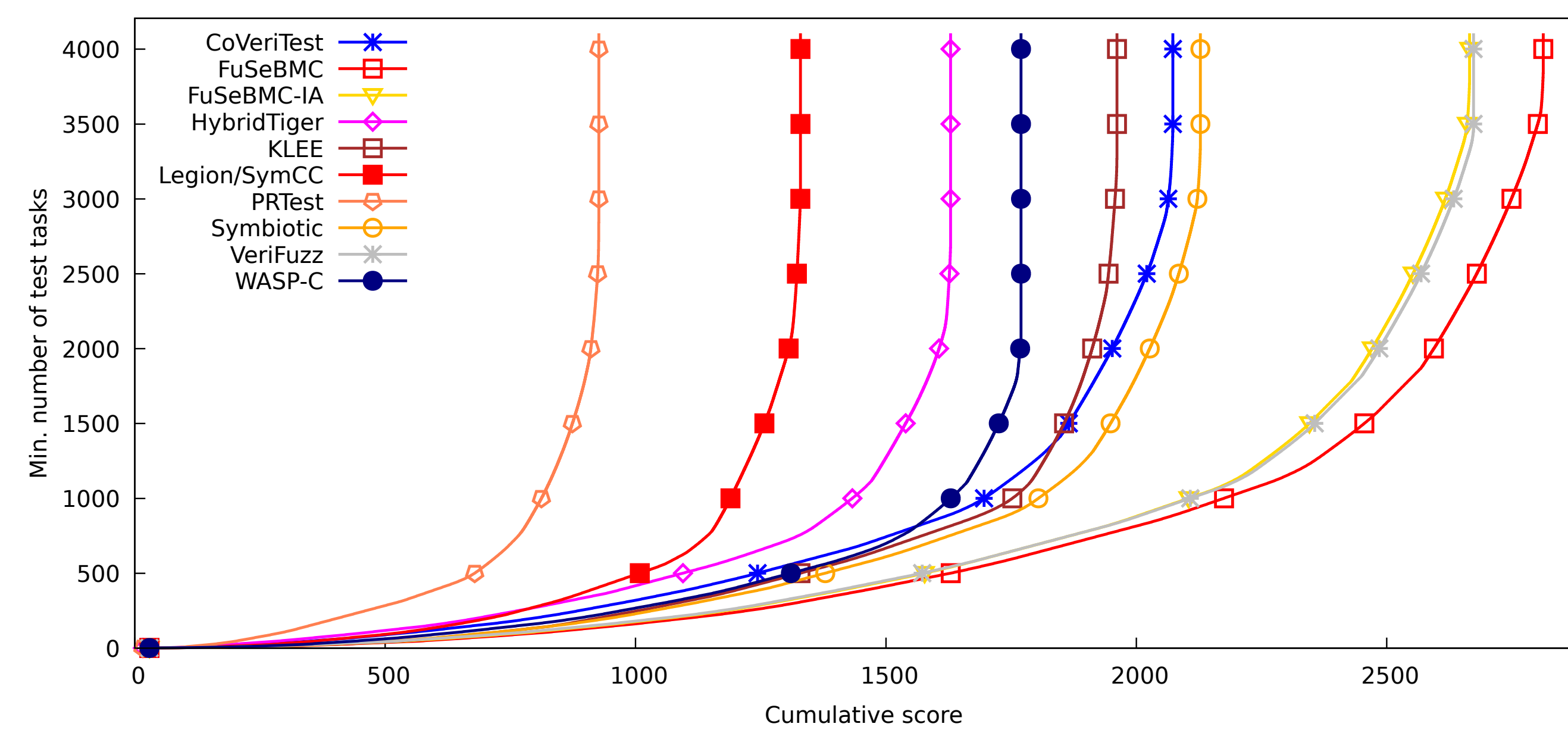
PARTICIPANTS

Table 1: Competition candidates with tool references and representing jury members; *new* indicates first-time participants

Tester	Jury member	Affiliation
CoVeriTEST	Marie-Christine Jakobs	TU Darmstadt, Germany
ESBMC-KIND <i>new</i>	Rafael Sá Menezes	U. of Manchester, UK
FuSeBMC	Kaled Alshmrany	U. of Manchester, UK
FuSeBMC_IA <i>new</i>	Mohannad Aldughaim	U. of Manchester, UK
HYBRIDTIGER	(hors concours)	-
KLEE	(hors concours)	-
LEGION	(hors concours)	-
LEGION/SYMCC	Gidon Ernst	LMU Munich, Germany
PRTTEST	Thomas Lemberger	QAware GmbH, Germany
SYMBIOTIC	Marek Trtík	Masaryk U., Brno, Czechia
TRACERX	Joxan Jaffar	National U. of Singapore, Singapore
VERIFUZZ	Raveendra Kumar M.	Tata Consultancy Services, India
WASP-C <i>new</i>	Filipe Marques	INESC-ID, Lisbon, Portugal

FINAL SCORE

Figure 1: Quantile functions for category *Overall*.



RANKING

Table 2: Overview of the top-three test generators for each category (measurement values for CPU time and energy rounded to two significant digits)

Rank	Tester	Score	CPU Time (in h)	CPU Energy (in kWh)
<i>Cover-Error</i>				
1	FuSeBMC	936	72	0.96
2	VERIFUZZ	909	4.5	0.049
3	FuSeBMC_IA <i>new</i>	908	37	0.48
<i>Cover-Branches</i>				
1	FuSeBMC	1678	720	9.2
2	VERIFUZZ	1546	730	9.1
3	FuSeBMC_IA <i>new</i>	1538	470	6.0
<i>Overall</i>				
1	FuSeBMC	2813	790	10
2	VERIFUZZ	2673	730	9.2
3	FuSeBMC_IA <i>new</i>	2666	500	6.5

FEATURES

Table 3: Technologies and features that the test generators used

Tester	Bounded Model Checking	CEGAR	Evolutionary Algorithms	Explicit-Value Analysis	Floating-Point Arithmetics	Guidance by Coverage Measures	Predicate Abstraction	Random Execution	Symbolic Execution	Targeted Input Generation	Algorithm Selection	Portfolio
CoVeriTEST		✓		✓	✓	✓	✓					✓
ESBMC-KIND <i>new</i>	✓			✓	✓	✓	✓			✓		✓
FuSeBMC	✓			✓	✓	✓	✓			✓		✓
FuSeBMC_IA <i>new</i>	✓			✓	✓	✓	✓			✓		✓
HYBRIDTIGER		✓		✓	✓	✓	✓			✓		✓
KLEE				✓	✓	✓	✓		✓	✓		✓
LEGION				✓	✓	✓	✓	✓	✓	✓		✓
LEGION/SYMCC				✓	✓	✓	✓	✓	✓	✓		✓
PRTTEST				✓	✓	✓	✓	✓	✓	✓		✓
SYMBIOTIC				✓	✓	✓	✓	✓	✓	✓		✓
TRACERX	✓			✓	✓	✓	✓	✓	✓	✓		✓
VERIFUZZ	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓
WASP-C <i>new</i>				✓	✓	✓	✓	✓	✓	✓		✓

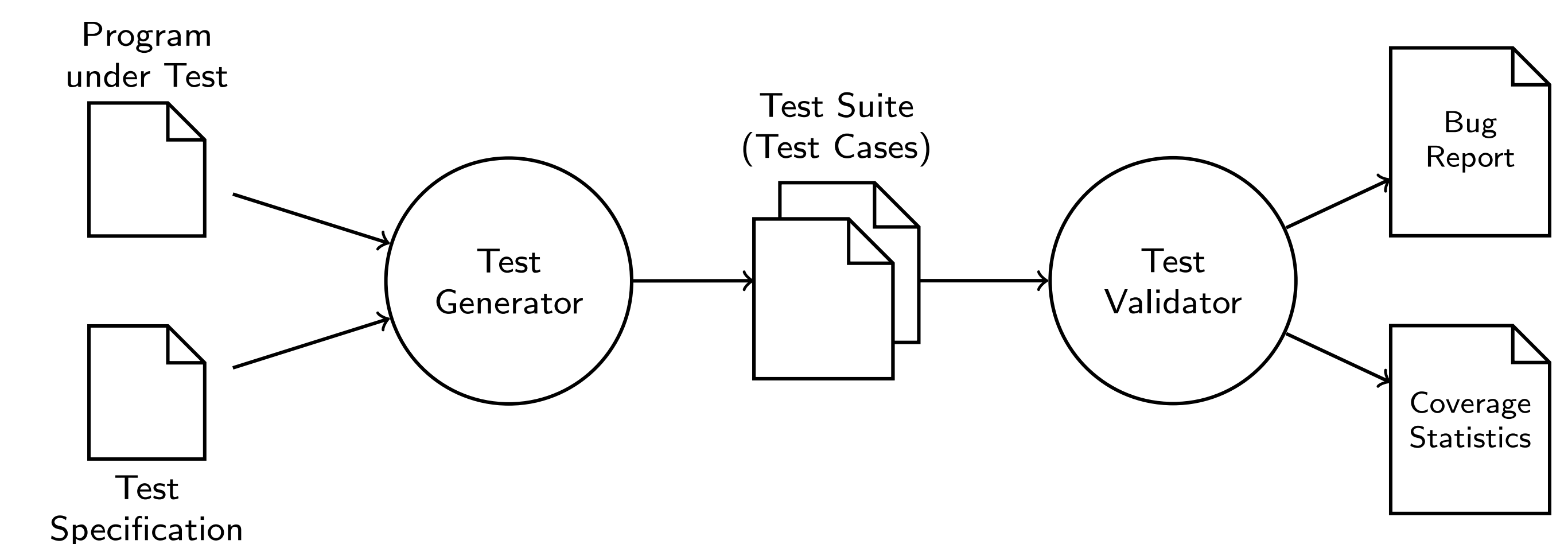
RESULTS

Table 4: Quantitative overview over all results

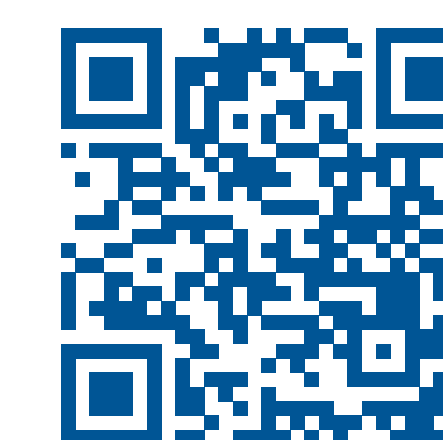
Tester	Cover-Error 1173 tasks	Cover-Branches 2933 tasks	Overall 4106 tasks
CoVeriTEST	581	1509	2073
ESBMC-kind <i>new</i>	289		
FuSeBMC	936	1678	2813
FuSeBMC_IA <i>new</i>	908	1538	2666
HybridTiger	463	1170	1629
KLEE	721	999	1961
Legion		838	
Legion/SymCC	349	1027	1329
PRTTest	222	770	927
Symbiotic	644	1430	2128
TracerX		1400	
VeriFuzz	909	1546	2673
WASP-C <i>new</i>	570	1103	1770

OVERVIEW

Figure 2: Flow of the Test-Comp execution for one test generator



MORE INFORMATION



<https://test-comp.sosy-lab.org/2023/>

Reference

D. Beyer. Software testing: 5th comparative evaluation: Test-Comp 2023. In *Proc. FASE*, LNCS 13991. Springer, 2023