Tiffany de Wintermonte

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Tiffany de Wintermonte (TdW), is an experimental eager solver for the combined theory of bit-vectors and arrays. TdW shares some code with STP2, another bit-vector and array solver.

TdW is a standard bit-blasting solver. It performs theory-level simplifications before bit-blasting via AIGs to CNF.

Currently TdW is not complete for `QF_ABV`. We have not finished work on it. So in the competition we pass problems for which we can not eliminate extensionality to Sonolar 3591 to solve.

TdW handles arbitrary precision integers using Steffen Beyers library. TdW encodes into CNF via the and-inverter graph package ABC of Alan Mishchenko et al. [BM10]. TdW uses Glucose 2.0 [AS09] as its SAT solver. We found many defects using Robert Brummayer and Armin Bieres fuzzing and delta debugging tools [BB09].

References

[AS09] Gilles Audemard and Laurent Simon. Predicting learnt clauses quality in modern SAT solvers. In *Proceedings of the 21st International Joint Conference on Artificial Intelligence*, IJCAI'09, pages 399–404, San Francisco, CA, USA, 2009. Morgan Kaufmann Publishers Inc.

[BB09] Robert Brummayer and Armin Biere. Fuzzing and delta-debugging smt solvers. In *Proceedings of the 7th International Workshop on Satisfiability Modulo Theories*, SMT '09, pages 1–5, New York, NY, USA, 2009. ACM.

[BM10] Robert K. Brayton and Alan Mishchenko. ABC: An academic industrial-strength verification tool. In *CAV*, pages 24–40, 2010.