SApperloT

Description of solver SApperloT
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The main issues of SApperloT

The submitted version of SApperloT extends the hybrid SApperloT solver that participated at at the sat competition 2009[5]. The solver is written in C++ and was submitted as a 32-bit version for the competition.

SApperloT is a hybrid solver that combines the idea of reference points with conflict-driven solving with clause learning (CDCL). Decision making with reference points (DMRP) was proposed by Goldberg [3, 4].
DMRP offers an appropriate method to analyse partial assignments during search: When the CDCL algorithm performs a restart the assignment stack is extended to a complete assignment R - a so–called reference point that we choose to fulfill all binary clauses at first stage. This complete assignment is then taken as an initial reference point for the DMRP algorithm. In difference to state–of–the–art CDCL the DMRP approach bases its decisions on the set of clauses that is not satisfied by a current reference point. Even though DMRP requires some extra information for solving this can give a good direction for the search. More details can be found in [6].

The CDCL implementation uses state–of–the–art techniques like phase saving and Luby restarts [7, 8, 10, 2, 9, 1]. We use our own preprocessor that runs for a maximum of 100 cpu-seconds to simplify a given instance.

References

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