

2 Aussagenlogische Entscheidungsverfahren

2.1 Resolution

Definition 2.1 (Subsumtion) Seien C und D Klauseln. C subsumiert D , falls $C \subseteq D$, d.h. falls jedes Literal von C auch in D vorkommt.

2.2 Davis-Putnam-Algorithmus

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(1)  boolean DPLL(ClauseSet S)
(2)  {
(3)      while ( S contains a unit clause {l} ) {
(4)          delete from S clauses containing l; // unit-subsumption
(5)          delete  $\bar{l}$  from all clauses in S; // unit-resolution
(6)      }
(7)      if (  $\square \in S$  ) return false; // empty clause?
(8)      if ( S =  $\emptyset$  ) return true; // no clauses?
(9)      choose a literal l occurring in S; // case-splitting
(10)     if ( DPLL(S  $\cup$  {l}) ) return true; // first branch
(11)     else if ( DPLL(S  $\cup$  { $\bar{l}$ }) ) return true; // second branch
(12)     else return false;
(13) }
```

Abbildung 1: Davis-Putnam-(Logemann-Loveland-)Algorithmus.