Prop $\longrightarrow$ * CDCL

fo without Eq $\longrightarrow$ * Superposition

* Inst Gen

* * SCL

Eq $\longrightarrow$ * Completion

* Congruence Closure

Linear Arithm $\longrightarrow$ Simplex

Prop + Theories $\longrightarrow$ * SMT

* CDCL(T)

$$R(x,y) \wedge R(y,z) \rightarrow R(x,z)$$

$$R(x,y) \wedge R(y,z) \wedge R(z,z') \rightarrow R(x,z')$$

$A(f(x), b) \vee B(x, y)$

$\neg A(f(f(x)), y)$

$\neg B(f(x), x)$

↓ Inst Gen

$A(f(b), b) \vee B(b, b)$

$\neg A(f(f(b)), b)$

$\neg B(f(b), b)$

||

↓ CDLC

$\neg A(f(f(x)), y)$

$\neg B(f(x), y)$

$A(f(x'), y)$

=

$\{x' \to f(x),\ y \to b\}$

$\neg A(f(f(x)), b)$

$A(f(f(x)), b) \vee B(f(x), b)$ ||

Instance for BS fragment

$\exists x_1 \ldots \exists x_n \forall y_1 \ldots \forall y_m \phi$ ← no quantifier no function symbols

(with equality in ϕ BSR)

CNF without function symbols

Relational database Theory; Representation only constants known

$$R(x,y) \wedge R(y,y') \vee R(y',z') \vee \dots$$

$$\begin{vmatrix} \neg R(-) & \\ \neg R(-) & \cdot \\ \vdots & \ddots \end{vmatrix}$$