The diagram appears to be related to logic and theorem proving, specifically focusing on CDCL (Conflict-Driven Clause Learning) and resolution. The terms and concepts include:

- Propositional Logic (Prop Logic)
- Resolution
- CDCL
- Equality (ground) Linear Arithmetic
- Semi-Urban
- FOL (no equality)
- Equational Reasoning
- Superposition
- FOL + Eq
- KBC
- CC
- Sim, FM
A map in $E_0 \cup R_0$ of $S = t$ sequence $(S_0, \ldots, S_n)$, $S_0 = s_i \in E_0$.

1. $S_{i-1} \to E_0$.
2. $S_{i-1} \to R_0$.
3. $S_i \leftarrow S_{i-1}$. 
By contradiction let \( T \) be an infinite \( E \)-term.

By construction it is in \( E \), therefore

1. \( t \) is not in \( E \).

2. \( s \) is not in \( R \).

3. \( S_i \leftarrow S_i \rightarrow S_i \rightarrow \ldots \) makes

\[ s \rightarrow t \rightarrow s' \rightarrow \ldots \rightarrow t \rightarrow \ldots \]

This is an infinite \( s \) that is deleted with in the step

a) \( s \) is deleted.

b) Delete \( s \rightarrow s \rightarrow s \rightarrow \ldots \rightarrow t \rightarrow \ldots \), etc.

There is a finite \( s \) that is deleted in this step.
PCP
\((ab, ab, a9), a4, ab, ab, ab\)
\((aba, ba, a), a6, b, a\)

\[\rightarrow f_{x}(3,3) \rightarrow d\]

\[f_{x}(s_{x}(x), s_{x}(y)) \rightarrow c\]

\[f_{x}(g_{x}(x), g_{x}(y)) \rightarrow c\]

\[f_{x}(g_{x}(g_{x}(x)), g_{x}(g_{x}(y))) \rightarrow f_{x}(x, y)\]

\[f_{x}(g_{x}(s_{x}(x)), g_{x}(s_{x}(y))) \rightarrow f_{x}(x, y)\]

\[f_{x}(g_{x}(g_{x}(x)), g_{x}(y)) \rightarrow f_{x}(x, y)\]