This document describes the calculus **ORES** as used in `Otter`:

1 The Calculus

A *clause* is a disjunction of literals. In the following literals are denoted by $L, L_1, L_2, \ldots$.
The Rules:

1. Input:
$$\frac{}{L_1 \vee \ldots \vee L_n}\ input$$
2. Equality Axiom:
3. Instantiation:
$$\frac{L_1 \vee \ldots \vee L_n}{(L_1 \vee \ldots \vee L_n)\sigma}\ inst(\sigma)$$
for a substitution σ.
4. Propositional:
$$\frac{L_1 \vee \ldots \vee L_i \vee \ldots \vee L_n}{L_1 \vee \ldots \vee L_{i-1} \vee L_{i+1} \vee \ldots \vee L_n}\ prop$$
where $L_i = L_j$ for some $j \neq i$, $1 \leq i, j \leq n$.
5. (Binary) resolvent:
$$\frac{C \vee \neg A \vee D \quad C' \vee A \vee D'}{C \vee D \vee C' \vee D'}\ res$$
where C, C', D and D' denote clauses and A is an atom.
6. Paramodulation:
$$\frac{C \vee s = t \vee D \quad C' \vee L[s] \vee D'}{C \vee D \vee C' \vee L[t] \vee D'}\ para$$
where C, C', D and D' denote clauses.
7. Flipping:
$$\frac{C \vee s = t \vee D}{C \vee t = s \vee D}\ flip$$
where C and D denote clauses.