

undirected edges (from  $\mathcal{M}$ ) are to be interpreted as two directed edges.

$$E(C) = \mathcal{A}(C) \cup \mathcal{M}(C)$$

$$V(C) = V(E(C))$$

$$G(C) = (V(C), E(C))$$

color of component is color of some term in it (all the same)

per resolution step: oppositely colored components are not unifiable

## Components

nodes: max col term occurrences and variables in grey occurrences.

1. components initially: for every variable, all grey occurrences and all colored occurrences
2. resolution: components of  $C_1$  and  $C_2$  are carried over, some are merged.

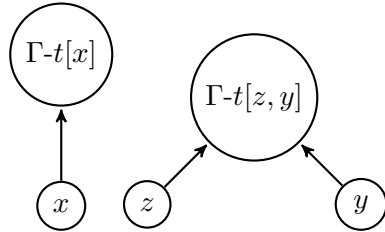
$$l\sigma = l'\sigma$$

For each max col term  $t$  in  $l\sigma$ : merge component of  $t$  and  $t'$ .

quantifier ordering: Build condensation of  $G(C)$ . If in the condensation there is a path from a node containing a term containing  $u_i$  to a node containing term containing  $u_j$ , then  $u_i <_{\hat{\mathcal{A}}(C)} u_j$ .

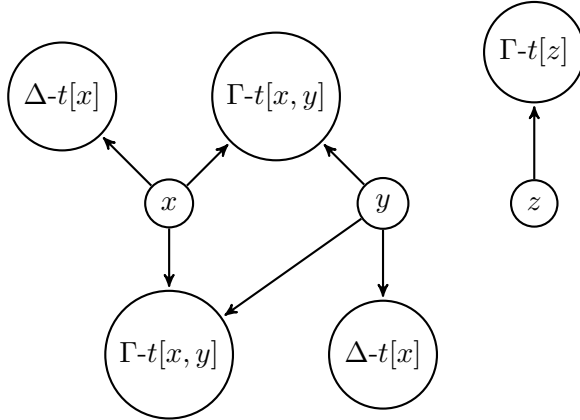
## graph components visualised

initially



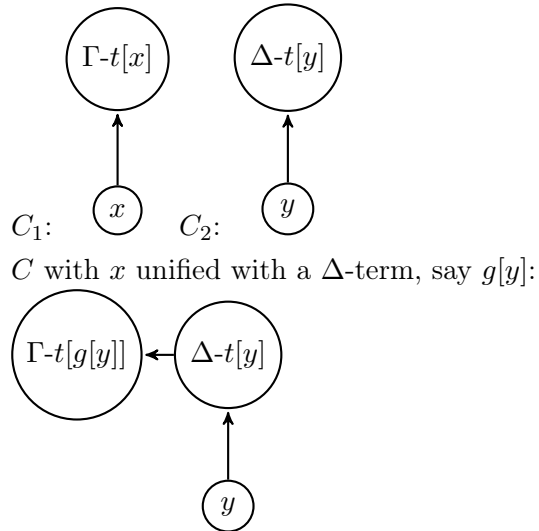
Note: initially, all colored terms are in one component

**in the derivation, single color**



Note:  $\Gamma$ - and  $\Delta$ -terms can not be merged (unified). All other combinations are possible.

**in the derivation**



**random notes**

1. if two variable-nodes in the condensation are connected when disregarding the arrow direction, they occur in the same clause.