surgery along $T$ = surgery along $\gamma(T)$

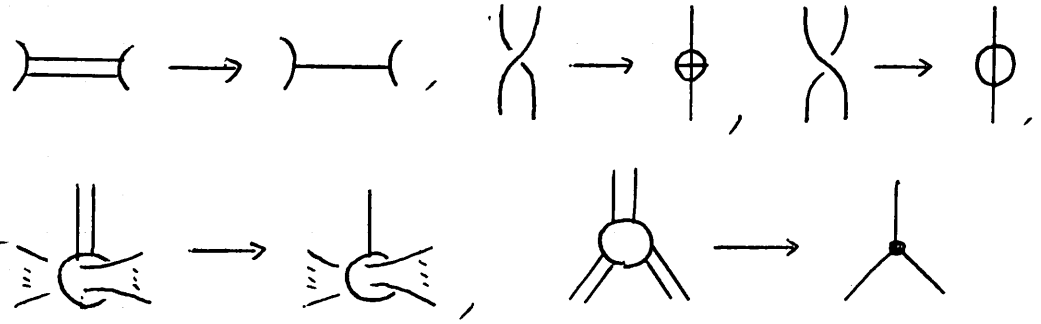
$S^3_{\gamma(T)}$ : 3-mfd. obtained from $S^3$ by surgery along $\gamma(T)$

Rmk $S^3_{\gamma(T)} \cong S^3$

$(S^3_{\gamma(T)}, L) \cong (S^3, L_T)$ より

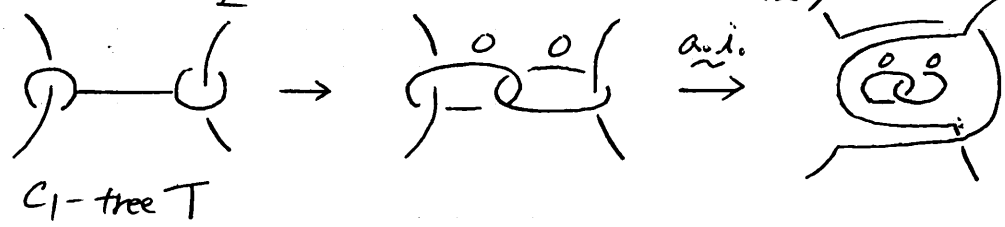
$T$ に沿った surgery は、$L$ の局所変形と見なすことができる.

Convention



Ex

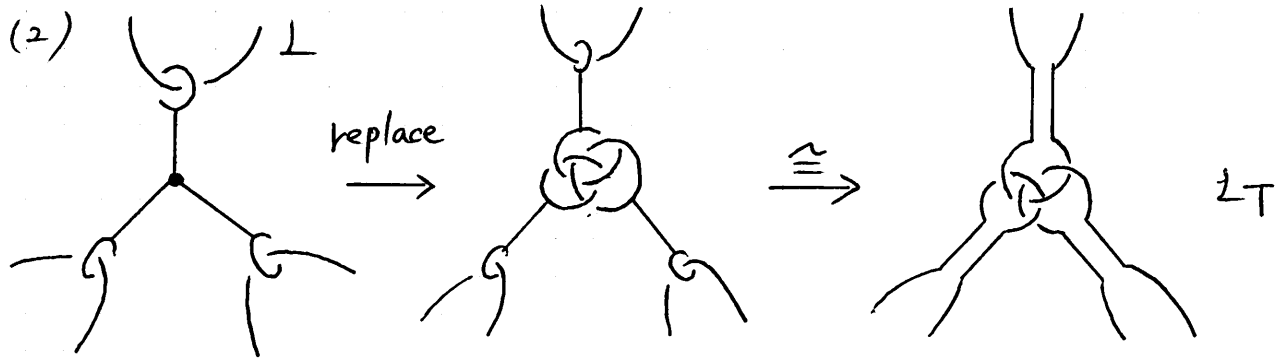
(1)




$C_1$-tree $T$

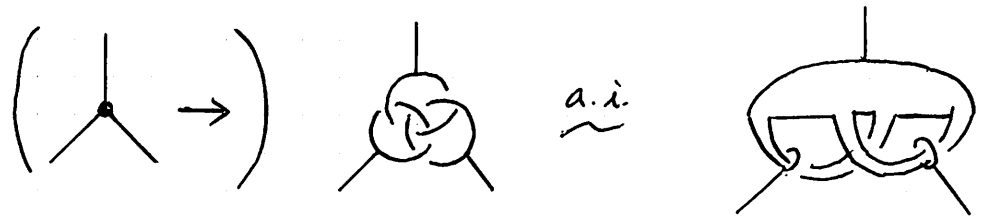
$= L_T$

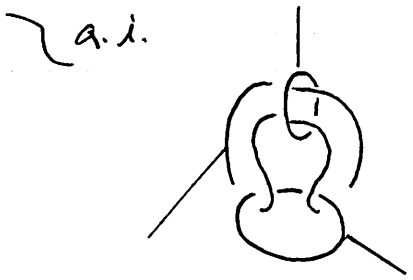
(2)



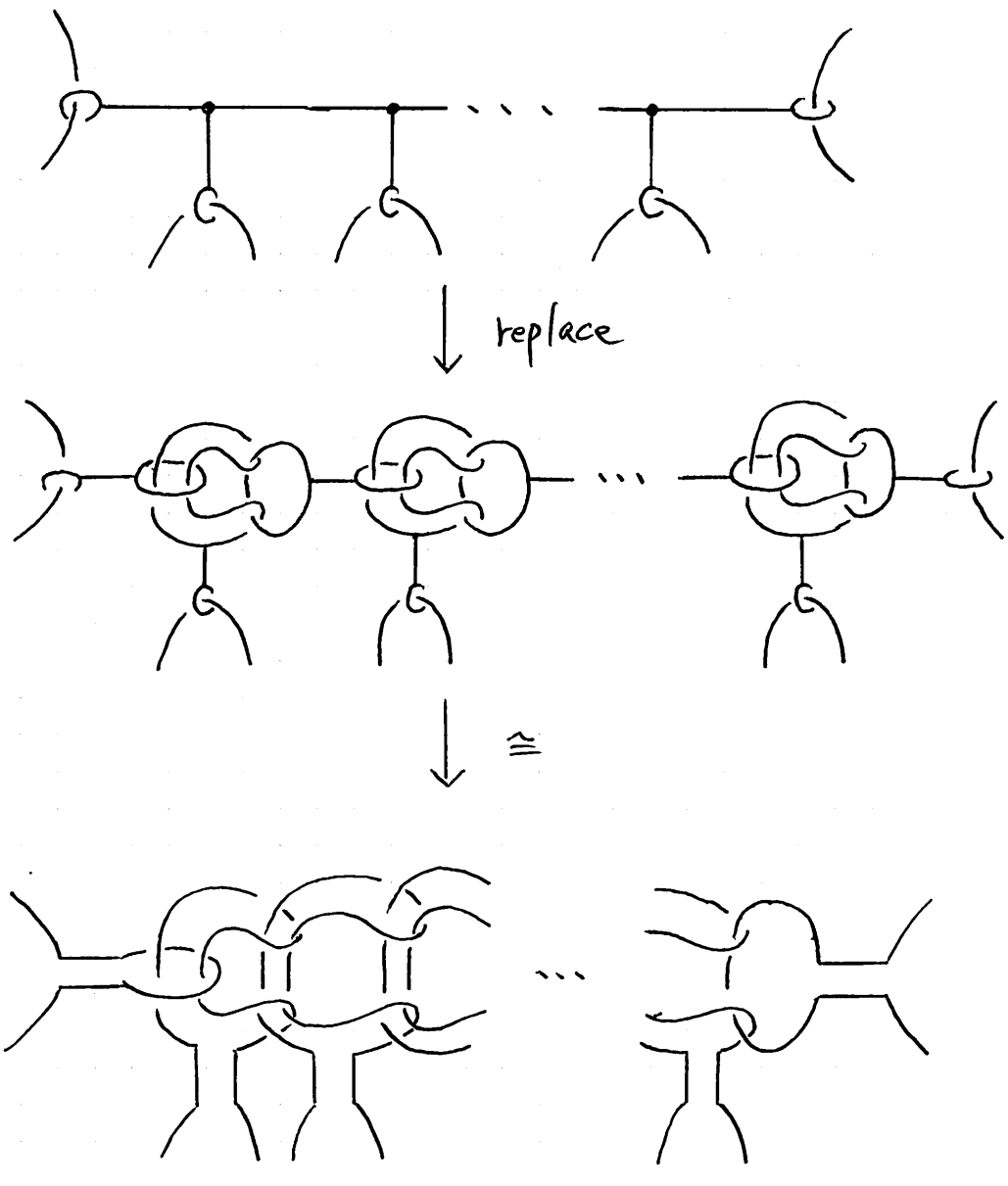

$C_2$-tree $T$

## Observation




(3)



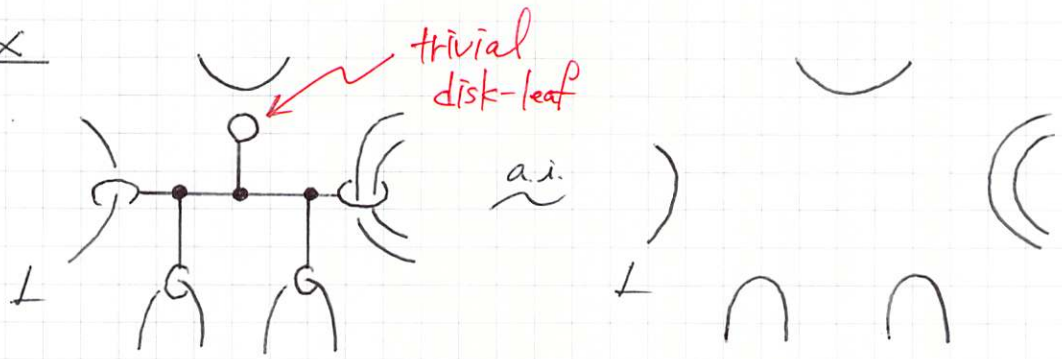
**Prop.** (Habiro '00)

$T$ : a tree clasper for $L$

$T$ has at least one trivial disk-leaf

$\Rightarrow L_T \overset{a.i.}{\sim} L$.

Ex




**Def.** $T$ : a (simple) $C_k$-tree for $L$

A (simple) $C_k$-move on $L$ := a surgery along $T$

$C_k$-equivalence := an equiv. relation on links generated by $C_k$-moves

**Prop.** (Habiro '00)

$L \overset{C_k}{\sim} L' \Rightarrow L \overset{C_\ell}{\sim} L' \quad (k > \ell)$

① $k \geq 2$, $\exists$ node