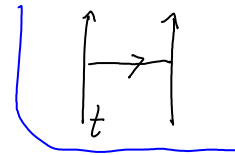


The XO Invariant

August-05-10  
12:48 PM

$x = \text{tail}$   
 $s = \text{head}$



The XO relations:

$$\begin{array}{|c} \uparrow \\ \hline \circ \\ \hline \rightarrow \\ \hline t \\ \hline \end{array} = \begin{array}{|c} \circ \\ \hline \rightarrow \\ \hline t \\ \hline \end{array} + (1-t) \begin{array}{|c} \rightarrow \\ \hline \circ \\ \hline t \\ \hline \end{array}$$

$$\begin{array}{|c} \rightarrow \\ \hline \circ \\ \hline t \\ \hline \end{array} = t \begin{array}{|c} \rightarrow \\ \hline \rightarrow \\ \hline \circ \\ \hline t \\ \hline \end{array}$$

Probably needs correction.

$$\begin{array}{|c} \uparrow \\ \hline x \\ \hline \rightarrow \\ \hline t \\ \hline \end{array} = \begin{array}{|c} x \\ \hline \rightarrow \\ \hline t \\ \hline \end{array}$$

$$\begin{array}{|c} \rightarrow \\ \hline \rightarrow \\ \hline x \\ \hline t \\ \hline \end{array} = (1-\bar{t}) \begin{array}{|c} x \\ \hline \rightarrow \\ \hline t \\ \hline \end{array} + \bar{t} \begin{array}{|c} \rightarrow \\ \hline x \\ \hline t \\ \hline \end{array}$$

$\Upsilon$ :

$$\begin{array}{|c} \uparrow \\ \hline \circ \\ \hline \rightarrow \\ \hline t \\ \hline \end{array} + \begin{array}{|c} \rightarrow \\ \hline \circ \\ \hline t \\ \hline \end{array} = \begin{array}{|c} \circ \\ \hline \rightarrow \\ \hline t \\ \hline \end{array} + \begin{array}{|c} \rightarrow \\ \hline \circ \\ \hline t \\ \hline \end{array}$$

Duality:

R3:  $\begin{array}{|c} \rightarrow \\ \hline \rightarrow \\ \hline \rightarrow \\ \hline \end{array} = \begin{array}{|c} \rightarrow \\ \hline \rightarrow \\ \hline \rightarrow \\ \hline \end{array} ?$

$$\begin{array}{|c} \circ \\ \hline \rightarrow \\ \hline \circ \\ \hline \rightarrow \\ \hline \circ \\ \hline \end{array} \begin{array}{|c} \rightarrow \\ \hline \circ \\ \hline \rightarrow \\ \hline \circ \\ \hline \end{array} = \begin{array}{|c} \rightarrow \\ \hline \rightarrow \\ \hline \rightarrow \\ \hline \end{array}$$

$$\begin{array}{|c} t_1 \circ \\ \hline \rightarrow \\ \hline \circ \\ \hline \end{array} \begin{array}{|c} \rightarrow \\ \hline \circ \\ \hline \rightarrow \\ \hline \circ \\ \hline \end{array} = \begin{array}{|c} \rightarrow \\ \hline \rightarrow \\ \hline \rightarrow \\ \hline \end{array}$$

$$\begin{array}{|c} \rightarrow \\ \hline \rightarrow \\ \hline \rightarrow \\ \hline \end{array} \begin{array}{|c} \rightarrow \\ \hline \rightarrow \\ \hline \rightarrow \\ \hline \end{array} = \begin{array}{|c} \rightarrow \\ \hline \rightarrow \\ \hline \rightarrow \\ \hline \end{array}$$

$$A = (1-t_2)(1-t_1) + t_2(1-\bar{t}_1) = (1-\bar{t}_1)$$