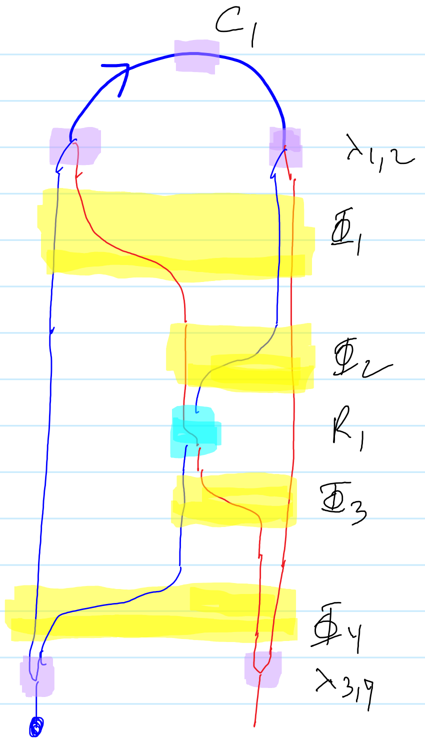
Double Tree Computations

November-25-11 10:51 AM



Φ_1 abstains by the overhand trick

$\Phi_{2,3}$ abstain by the two reds rule

Φ_4 abstains by the overhead trick, applied downwards. ["The underbelly trick"]

C_1 contributes $\nu^{1/2}$

$\lambda_{1,2}$ abstain because red legs may be ignored.

λ_3's stem part can be moved across infinity to a counter red.

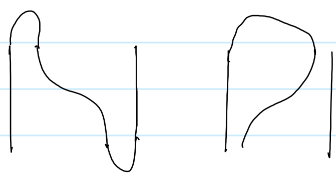
λ_3's leafs push up and contribute $(\nu^{1/4})^2$

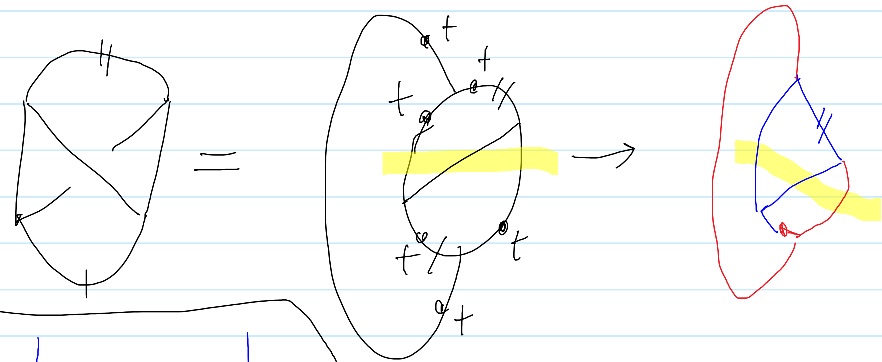
λ_4 abstains as it is all red.

R_1 contributes $\exp \frac{1}{2} \underline{\frown}$

So overall, $\zeta_1(\frown) = \nu e^{\frac{1}{2}\underline{\frown}}$.

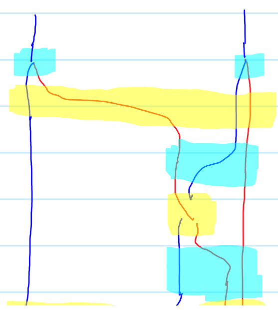
An alternative.





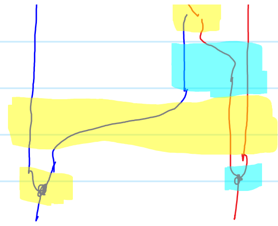
Some automatic cancellations:

Cancels

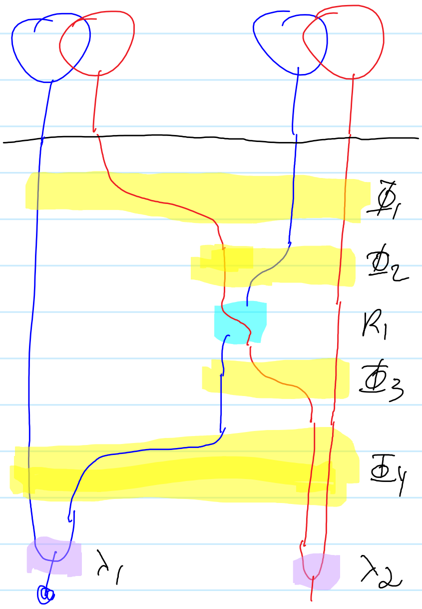


Cancels

Survives



⚭ and disjoint unions:



Φ_1 abstains by S_3 non-degeneracy.

$\Phi_{2,3}$ abstain by the two reds rule.

Φ_4 abstains by the underbelly trick.

λ_1 abstains because the $\nu^{\pm 1/4}$ on its legs can each be pushed to some red zone.

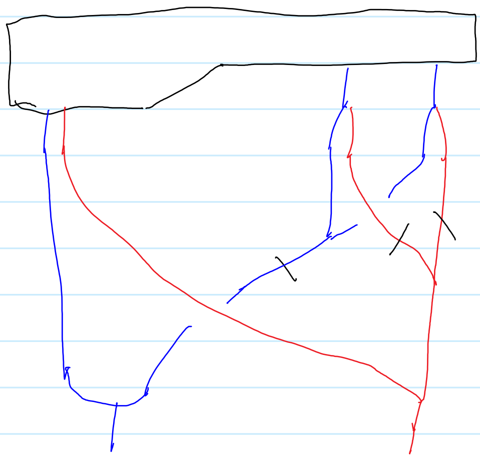
λ_2 abstains because it is in a red zone.

R_1 abstains by head-invariance of the left double tree.

.... so ζ_1 maps disjoint unions to disjoint unions.

There ought to be a nicer alternative!

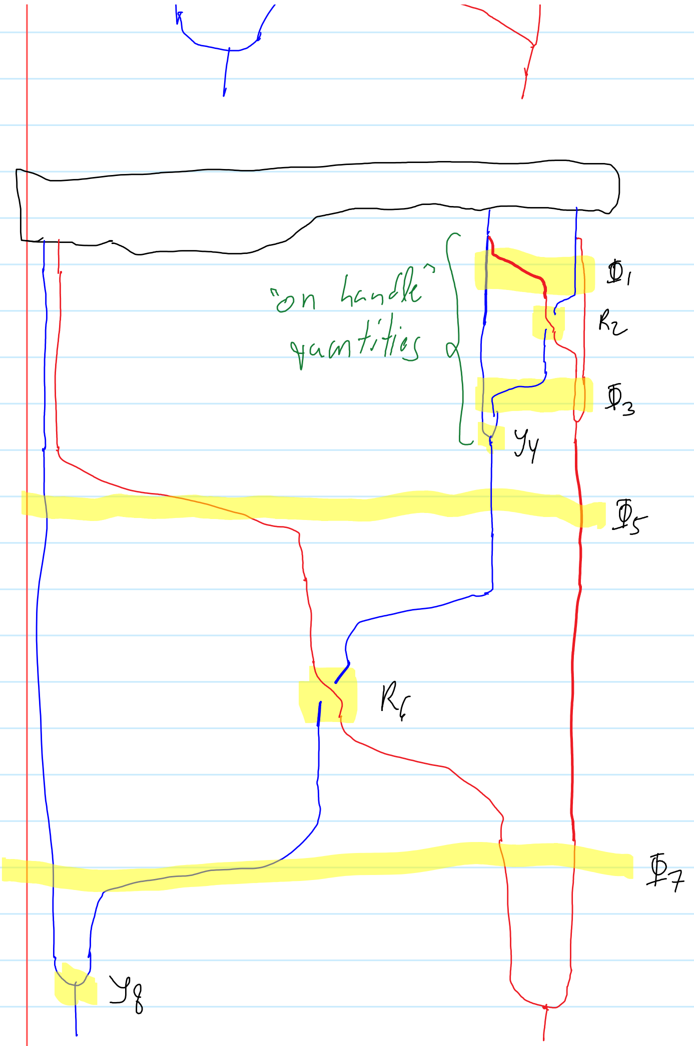
⚭ and contractions: [is this the most general case?]



compare: 1. 3 cuts, then puncture and unzip

"contract, then ζ"

with 2. Puncture and unzip, then cut & tube.



Then cut & tube.

"} then contract".

Process 1 outputs a single $\nu^{1/2}$ factor on the handle.

Process 2:

Φ_1 produces a yet-unknown quantity, on handle.

R_2 produces $e^{\frac{1}{2}\frown}$, on handle

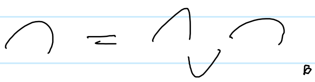
Φ_3 ......

Φ_5 abstains by overhand.

R_6 abstains: push up, puncture, unzip, cut, tube, push down, nothing stays.

Φ_7 abstains by underbelly.

y_8 abstains like R_6

Moral. I could not compute the handle contribution but it seems the overall contribution is localised at the handle so it can be computed using .