Double Tree Computations

November 25 - 2011

\( C_1 \) abstains by the overhead trick
\( \Phi_{1,2} \) abstains by the two rule rule
\( \Phi_{1,2} \) abstains by the overhead trick applied downwards. \[ \text{"The umbrella trick"} \]

\( R_1, R_3 \)

\( C_1 \) contributes \( \sqrt{2} \)

\( \Phi_4 \) abstains because red legs may be ignored.

\( \lambda_3 \)'s stem part can be moved across infinity to encounter red.

\( \lambda_3 \)'s leaves push up and contribute \( (\sqrt{14})^2 \)

\( \lambda_4 \) abstains as it is all red.

\( R_1 \) contributes \( 1 \times \pi \frac{1}{2} - \delta \)

So overall, \( \hat{S}(\wedge) = 2 \times e^\frac{1}{2} - \delta \).

An alternative.

Some automatic cancellations:

\( \text{Cancels} \)
and disjoint unions:

\( \emptyset \) abstains by \( S_3 \) non-degeneracy.

\( \emptyset_{13} \) abstains by the two reds rule.

\( \emptyset_{1} \) abstains by the under-belly trick.

\( \emptyset_{2} \) abstains because the \( V^{1/4} \) on its legs can each be pushed to some red zone.

\( \emptyset_{3} \) abstains because it is in a red zone.

\( R_{1} \) abstains by head-inversion of the left double tree.

... so \( \tilde{S} \) maps disjoint unions to disjoint unions.

There ought to be a nicer alternative?

\( \emptyset_{1} \) and contractions: [is this the most general case?]

compare: 1. 3 cuts, then puncture

and until

"contract, then \( \tilde{S} \)"

with 2. puncture and write

then cut \& tube.
Then cut & tube. "Then contract."

$\sqrt[2]{2}$ factor on the handle.

Process 1 outputs a single

Process 2:

- $a_1$ produces a yet-unknown quantity on handle.
- $a_2$ produces $a_2^2$, on handle.
- $a_5$ abounds by overhead
- $a_6$ abounds: push up, puncture, unzip, cut tube, push down, nothing stays.

$D_7$ abounds by underbelly.

$y_8$ abounds like $r_1$

**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 $\nu = \nu_0$. 

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