An E-K view of j

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10:43 AM

Picture on page "Alekseev - Torossian"

Proposition 5.1. *There is a unique map $j : \mathrm{TAut}_n \to \mathfrak{tr}_n$ which satisfies the group cocycle condition*

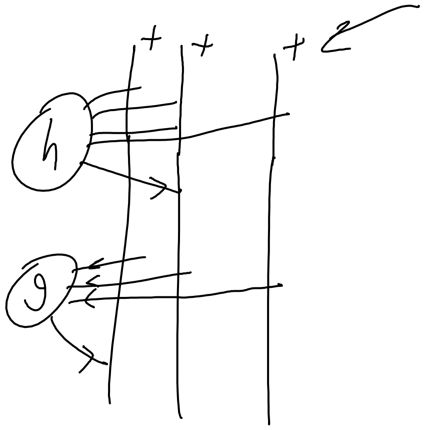
$$j(gh) = j(g) + g \cdot j(h), \tag{18}$$

and has the property

$$\frac{d}{ds} j(\exp(su))|_{s=0} = \operatorname{div}(u). \tag{19}$$

$$j(\exp(u)) = \frac{e^u - 1}{u} \cdot \operatorname{div}(u)$$

Picture on page "Alekseev - Torossian"



+ kills incoming arrows: $\to|^{+} = 0$

A better notation will be a good idea.

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projection → Funny, like E-K it kills all braids.

$$0 \to A(\uparrow_n) \underset{\text{non-obvious, but canonical.}}{\rightleftarrows} A(|_n) \to A^{\text{trees}}(|_n) \to 0$$

does this map have a topological meaning? → "Connect to infinity going over everything you see"?

"Connect to infinity going out completely virtually"?

there shouldn't be a simple "local" meaning ← makes no sense ← not well defined

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Let's make the topological question precise:

There is a canonical map from "long ribbon tubes in $\mathbb{R}^4$" to "semi-infinite ribbon tubes in $\mathbb{R}^4$" ("cap one end").

Does this map have a canonical section?

And then, same question in the multiple-tube case.

what's canonical?

* should have a prescribed behaviour on the unknotted long tube.
* should not change if "head goes under something".
* should be a $\mathfrak{g}^*$-module morphism; i.e., should commute with "tail goes over something"

I wish I knew claspers!