j of F mod CC

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11:40 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

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

In D-talk this is

$$j(D) = \mathcal{S}W(D) \cdot D$$

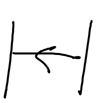
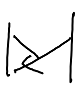
added Feb 12, 2009: I'm no longer convinced if this is for all D or only for exponential D's.

where *S(D) is the antipode of $\mathcal{A}^w_n$, the anti-automorphism that turns diagrams upside down & multiplies every leg by -1.

* W(D) maps every in-leg in D to its negative.

Added Feb 13, 2009: There ought to be an even simpler, E-K-style interpretation of $j(D)$

Q What is j on $(n=2)$

$\exp\big(a_1$  $+ a_2$  $+ H(f_1)$  $+ H(f_2)$  $\big)$

$=: \exp(u)$

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

Picture on page "Alekseev - Torossian"

$\operatorname{div} u = (x_2 f_1 \pm x_1 f_2) w$ Probably $(-)$.

$\Rightarrow j(\exp u) = (x_2 f_1 \pm x_1 f_2) w$

Q What's the first thing to depend on whether j is right?

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what's $\tilde{F}$ mod CC? $\quad ch(x,y) = \log e^x e^y$

$$\tilde{f}(a) = a(x) + a(y) - a(ch(x,y))$$

mod CC, in t/n, this is

$$= a(x) + a(y) - a(x+y)$$