PolyPoly Extras

Monday, August 24, 2015 3:10 AM

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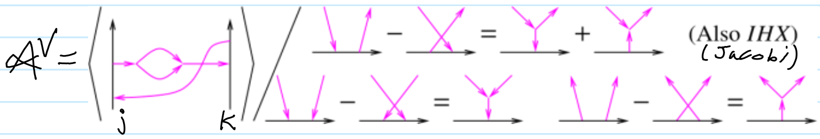
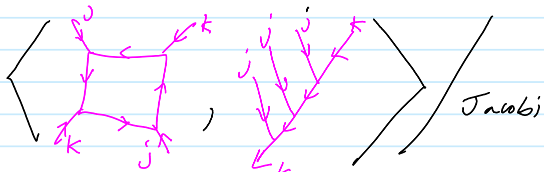
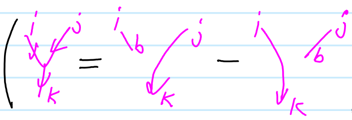
http://drorbn.net/LD

$\mathcal{A}^v =$ 

$P\mathcal{A}^v/(\ldots = 0) =$ 

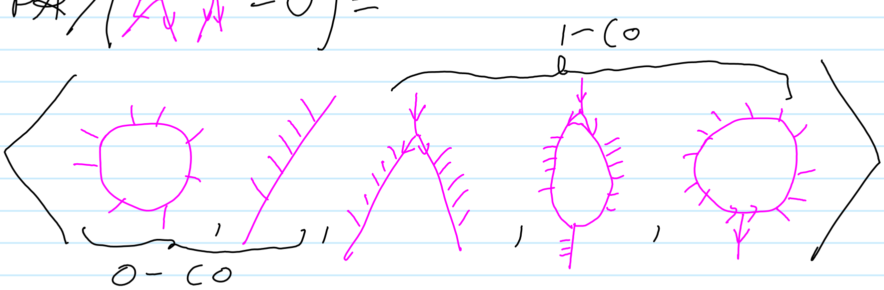
$P\mathcal{A}^w = P\mathcal{A}^v/lco$

So

$P\mathcal{A}^w(\uparrow_S)\big/\big($  $\big) = \hat{R}_S \oplus M_{S\times S}(\hat{R}_S)$ $\otimes[[b_i]]$

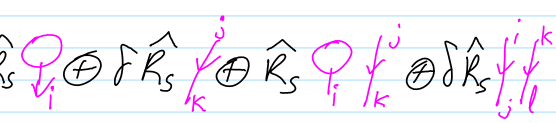
and the rest is (hard!) calculations, which lead to a simple rational-function result.

$P\mathcal{A}^v/(\ldots = 0) =$



So with $b_i :=$, $c_j :=$, $\delta :=$ 

$(P\mathcal{A}^v/2co)/_{2D} \subset$

$\hat{R}_S \oplus M_{S\times S}(\hat{R}_S) \oplus \hat{R}_S \ldots \oplus \delta\hat{R}_S \ldots \oplus \hat{R}_S \ldots \oplus \delta\hat{R}_S \ldots$ 

$= V_S + V_S^{\otimes 2} + V_S + V_S^{\otimes 2} + V_S^{\otimes 3} + (S^2(V_S))^{\otimes 2}$

[The product law is awful, but experience shows that things simplify....]

Stitching is clearly possible, but I still don't have explicit formulas.

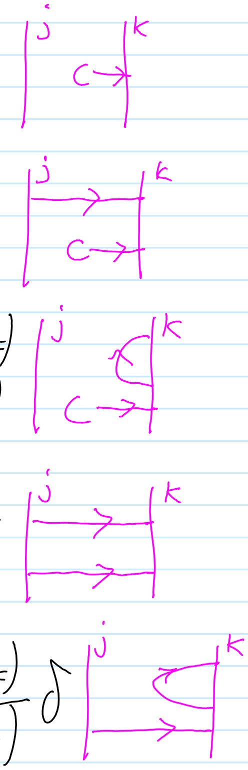
Proposition The element R_{ij} given below solves the YB equation

$$R_{12}R_{13}R_{23} = R_{23}R_{13}R_{12}$$

in $\mathcal{A}^v/2co/2D$!

$R_{jk} = e^{j\longrightarrow k}e^{\rho}$, with

$$\rho = -\phi_2(b_j)\ \ldots + \frac{\phi_2(b_j)}{b_j}\ \ldots + \frac{\phi_1(b_j)\phi_2(b_k)}{b_k\phi_1(b_k)}\ \ldots - \frac{\phi_2(b_j)}{b_j^2}\delta\ \ldots - \frac{\phi_1(b_j)\phi_2(b_k)}{b_jb_k\phi_1(b_k)}\delta\ \ldots$$



where $\phi_1(x) = e^{-x} - 1$

and $\phi_2(x) = \dfrac{(x+2)e^{-x} - 2 + x}{2x}$