PolyPoly Extras

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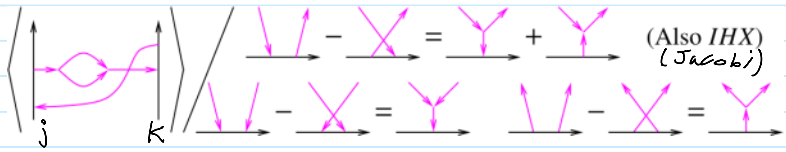
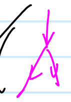
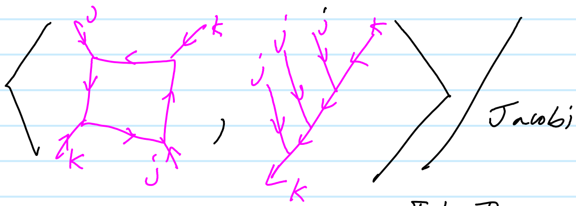
http://drorbn.net/LD

Monday, August 24, 2015 3:10 AM

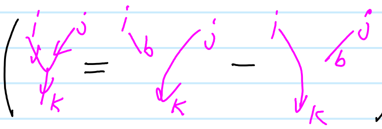
$\mathcal{A}^v =$ 

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

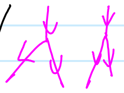
$\parallel$

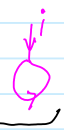
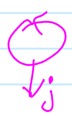
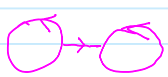
$P\mathcal{A}^w = P\mathcal{A}^v / 1co$

So

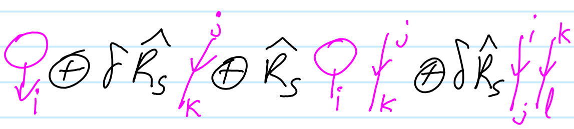
$P\mathcal{A}^w(\uparrow_s) /$ () $= \widehat{R}_s \oplus M_{s\times s}(\widehat{R}_s)$ // $\oplus[b_i]$

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

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

So with $b_i :=$  $c_j :=$  $\delta :=$ , (b_i: 0-co; c_j, δ: 1-co)

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

$\widehat{R}_s \oplus M_{s\times s}(\widehat{R}_s) \oplus \widehat{R}_s$ 

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

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

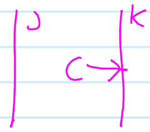
Stitching is clearly possible, but I still don't have explicit formulas.

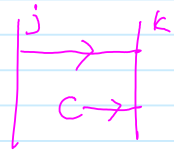
Proposition The element R_{ij} given below solves the YB equation

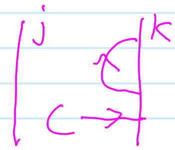
$$R_{12}R_{13}R_{23} = R_{23}R_{13}R_{12}$$

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

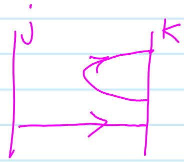
$R_{jk} = e^{j\longrightarrow k} e^{\rho}$, with

$\rho = -\phi_2(b_j)$ 

$+ \dfrac{\phi_2(b_j)}{b_j}$ 

$+ \dfrac{\phi_1(b_j)\phi_2(b_k)}{b_k\phi_1(b_k)}$ 

$- \dfrac{\phi_2(b_j)}{b_j^2}\delta$ 

$- \dfrac{\phi_1(b_j)\phi_2(b_k)}{b_j b_k \phi_1(b_k)}\delta$ 

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

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