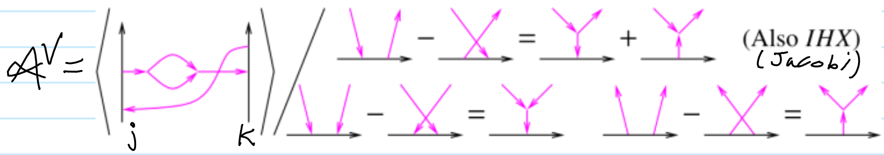
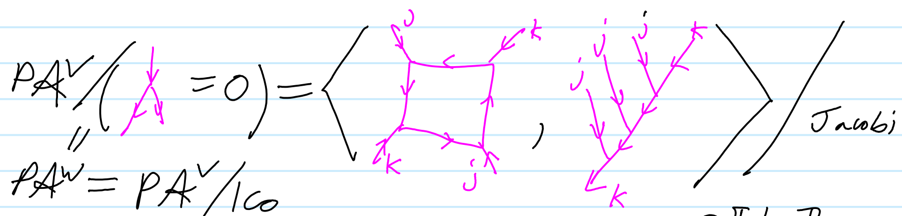
PolyPoly Extras

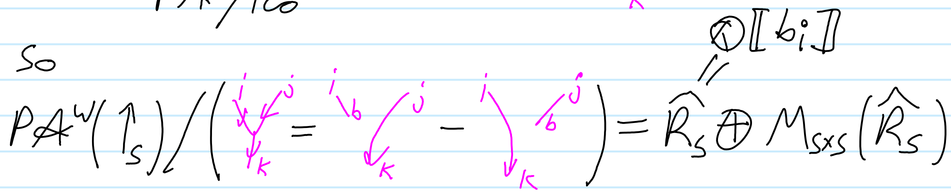
Dror Bar-Natan, Iowa, March 2016, http://drorbn.net/Iowa-1603



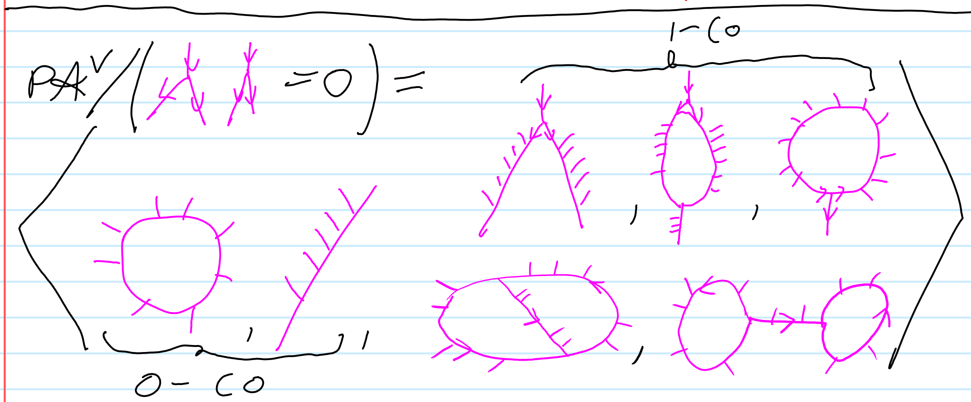


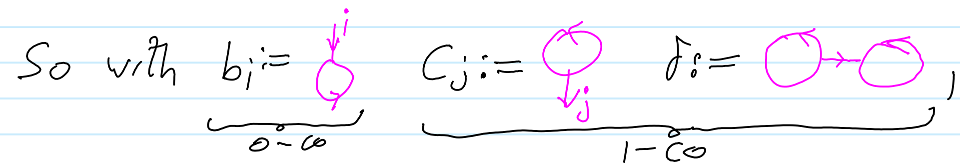
$P\mathcal{A}^w = P\mathcal{A}^v/1co$

So

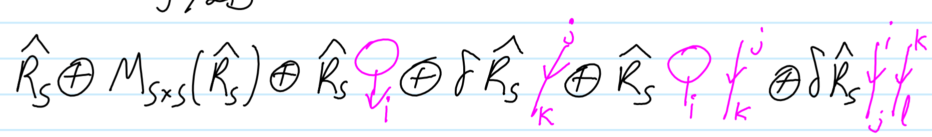


and the rest is (hard!) calculations, which lead to a simple rational-function result.





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



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

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

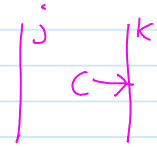
Stitching is clearly possible, but I still don't have explicit formulas.

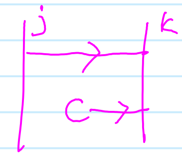
Proposition The element R_{ij} given below solves the YB equation

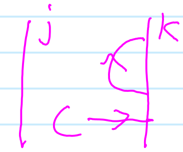
$$R_{12}R_{13}R_{23} = R_{23}R_{13}R_{12}$$

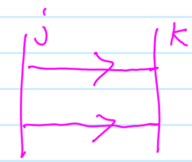
in $\mathcal{A}^v/2co/2D$:

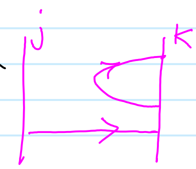
$R_{jk} = e^{j\longrightarrow k} e^{\rho}$, with

$\rho = -\phi_2(b_j)$ 

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

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

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

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

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

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