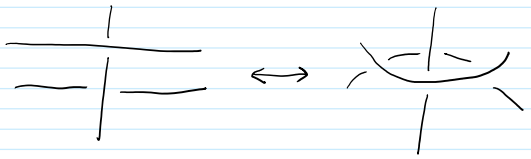
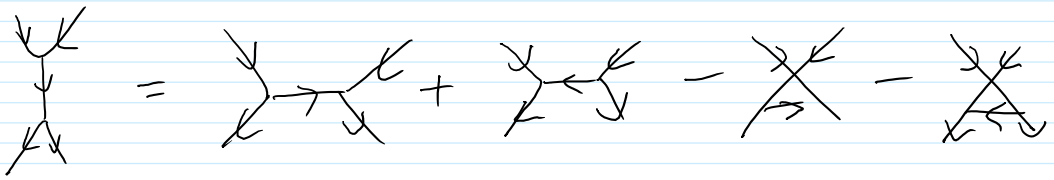
Scratch

April 2, 2017 10:59 AM



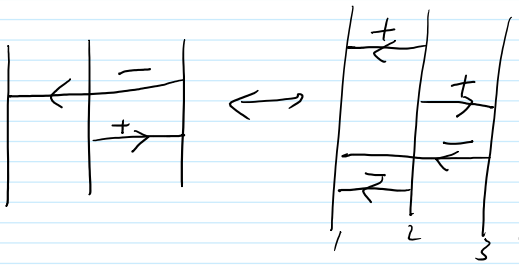
IHX_5:



Is $\mathcal{D}^V(n_{in}, m_{out}) =$

Maybe I should just work w/ Enriquez's presentation?

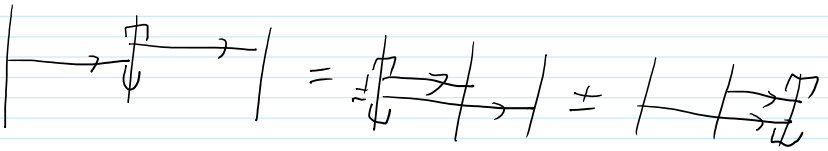
(Except it represents more than just the primitives, so it may be too large)



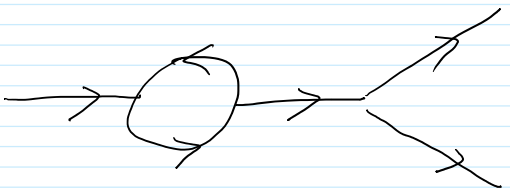
I need:

1. Methodologies to constrain the types of primitive diagrams that may arise on the right.
2. Technology to compute them.

6T:

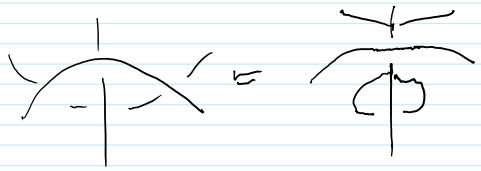


Does "infection with a Casimir" make sense in Av? or is another constraint on "the semi-simple part of $\mathcal{A}^V$"?



Q. What is the simplest v-tangle property that semi-simple algebras cannot see?

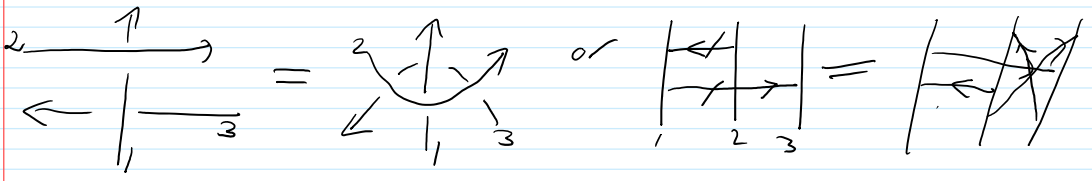
Is there a multi-$\hbar$ version of quantization of Lie bialgebras?



Why is it a good idea for the coproduct to quantize the cobracket?

Is there an a-priori reason why there should always be a deformation of the structure for which $e \mapsto 1$ would solve QYBE?

I should figure out what the QD trick does to Z^w.



Two Lie algebra with a pairing, how would you pair their UEAs?

$$U(g_1 \oplus g_2) / U(g_1 \oplus g_2)[x \otimes y - \langle x, y \rangle] \quad ?$$

Not this; but maybe something like it?

(Possibly scalar pairings are irrelevant; more precisely, the target space of pairings should be as big as the Cartan)

I should refresh my understanding of "diagrammatic doubled Cartans"!

See pensieve://2009-01, perhaps especially http://drorbn.net/AcademicPensieve/2009-01/KAL-090128-_Lie_bialgebras,_gl(N),_framing_v-knots.pdf,
Also see 2009-02/FiC_Issues.

Taylor for exponentials?

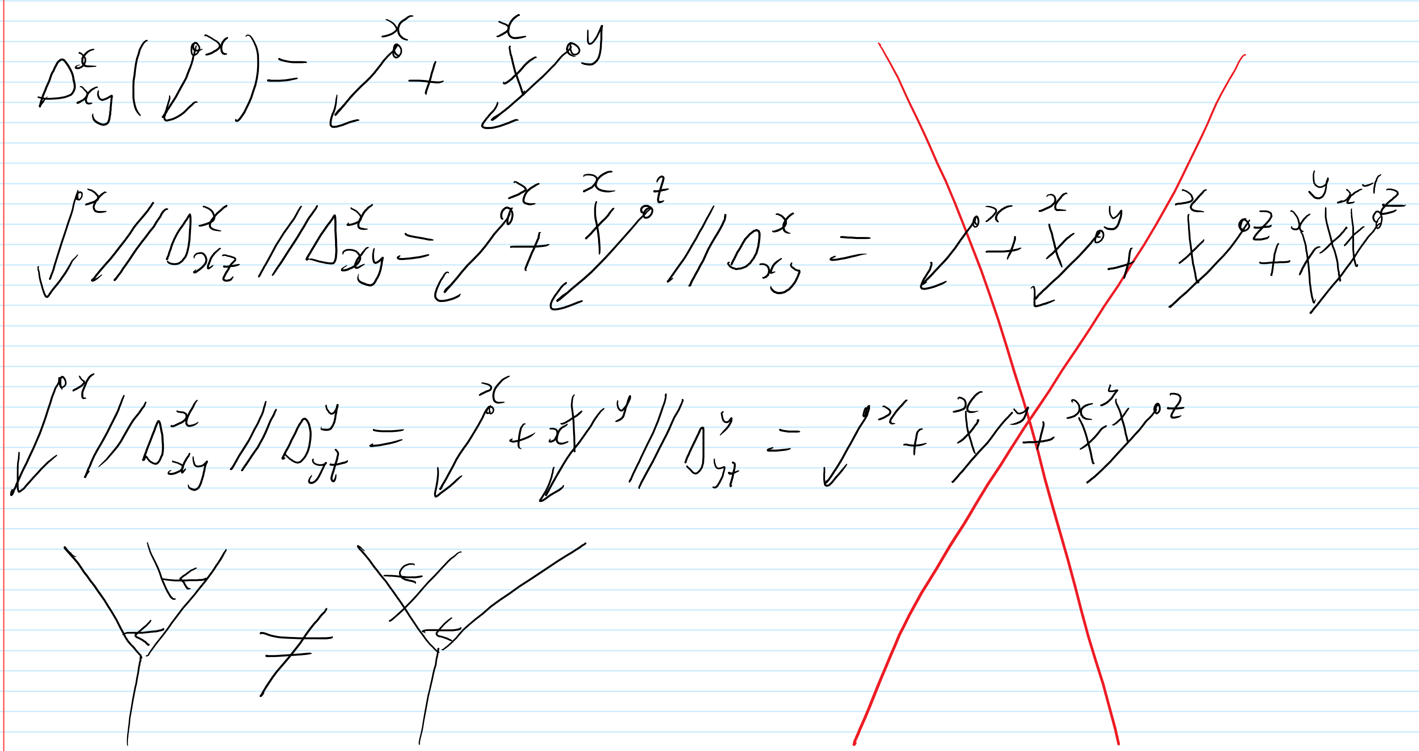
$F(x) = F\left(\frac{\partial}{\partial \alpha}\right) e^{\alpha x} \Big|_{\alpha=0}$ Inverse Laplace transform?

What's the q-analogue?

$$F(x) = F(D_{q,\alpha})\, e_q^{\alpha x} \Big|_{\alpha=0}$$

Monoblog? Mathematica?

where $D_{q,\alpha}\, g := \frac{g(q\alpha) - g(\alpha)}{q\alpha - \alpha}$?



$D_q F(x) = \frac{F(qx) - F(x)}{qx - x}$ $\quad D_q \frac{x^n}{[n]_q!} = \frac{(q^n-1)x^n}{(q-1)x\,[n]_q!} = \frac{x^{n-1}}{[n-1]_q!}$

So $D_q e_q^x = e_q^x$

with $q = e^\epsilon$ get and $E(x) := e_q^x$ get $E(x) = e^x(1 + \dots)$

$$E(e^\epsilon x) - E(x) = (e^\epsilon - 1)\, x\, E(x)$$

$$\frac{q^n - 1}{q - 1} = \sum_{k=0}^{n-1} e^{k\epsilon} = \sum_{j=0}^{\infty} \frac{\epsilon^j}{j!} \sum_{k=0}^{n-1} k^j$$