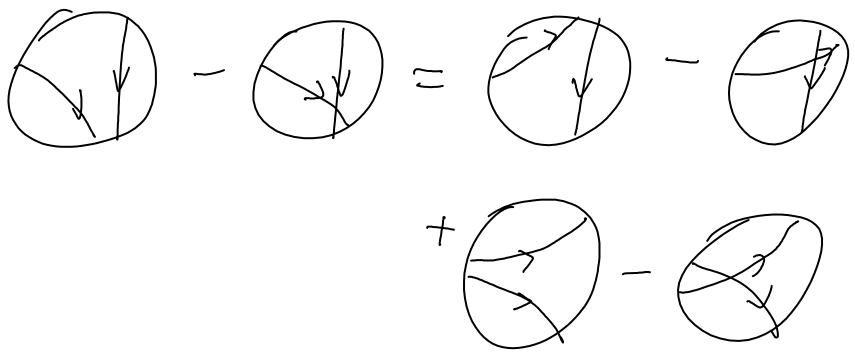
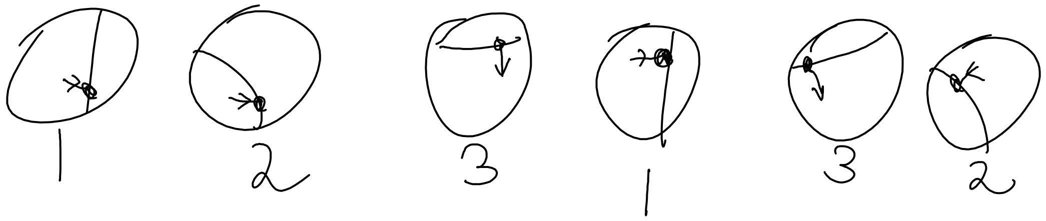
Doubling the Cartan

January-19-09
8:20 PM



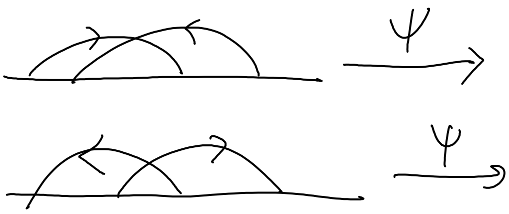
$$\begin{tikzcd} & U(\mathfrak{g}_+ \oplus \mathfrak{g}_-) \arrow[d] \\ \vec{A} \arrow[ur] \arrow[r] & U(\mathfrak{g}) \end{tikzcd}$$

LHS should split too.



$\mathcal{A}(\uparrow) \longrightarrow \mathcal{A}(\uparrow\uparrow^{as})$ is trivial
$\vec{\mathcal{A}}(\uparrow) \xrightarrow[\psi]{} \vec{\mathcal{A}}(\uparrow\uparrow^{rs})$ is not trivial

understand!



Q Is there a good way to take "Ker ψ" throughout, so as to "quantize" semi-simple Lie algebras without an extra Cartan factor?

Q Given a solution r of the Infinitesimal Yang Baxter Equation (IYBE) for some Lie(?) algebra $\mathfrak{g}$, what further structure is required on some vector space V so as to have a well defined "tensor map"

is this at all the right target?

$$\mathcal{T} : \vec{A}(\uparrow\uparrow_{ab}) \longrightarrow U(\mathfrak{g}) \otimes S(V) \quad ?$$

Is this related to the E-K construction of a Lie-bialgebra given a solution of IYBE?

$(x,y) \mapsto \hbar[x,y]$ $\quad U_\hbar(\mathfrak{g})$ is graded.

What is $U_\hbar(\mathfrak{g})^{ab}$? It is $S(\mathfrak{g})_{\hbar=0}$

$\vec{A}(\uparrow^{ab})$ is Sym(Cartan)!

Are we somehow talking here about "the homology of the complement of a v-knot"?

looks like it!