The next-simplest example

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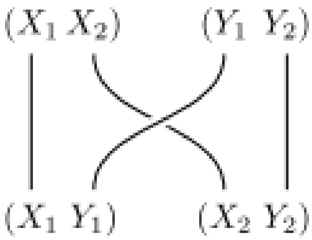
4:36 AM

Pavol writes: For the next simplest example look in my paper with David, sect.3. You can read it, but you can just look at the parenthesized braid with 4 strands which is drawn there. Let J in U(g+g+g+g)[[hbar]] be what corresponds to this braid.



$\to J$

$\|$
S (S for swinging)
Perhaps I should make a "properties of S" mini-poster.

Now if A is an algebra in $\boxed{\text{U(g+g)-Mod^Phi}}$ (notice: there is no bar over any g) then:

1. A is a Ug-module, where this g is the diagonal in g+g, but the original product m on A is no longer associative in Ug-Mod^Phi

2. however, if we compose m with the action of J: A \otimes A -> A\otimes A, then this new product m' is associative in Ug-Mod^Phi

A. This is really $U(g)\otimes U(g)$-$Mod^{\Phi\otimes\Phi}$

This I must understand

...and the problem is that I don't understand what is "an algebra"

3. we can have there a spectator Lie algebra h, i.e. A is in U(g+g+h)-Mod^Phi, and we make it to an associative algebra in U(g+h)-Mod^Phi (with the same J \in U(g+g+g+g))

There are now two possibilities for the "next simplest" algebra:

1. start with A=C^infty((G x \bar G)/G x (G x \bar G)/G)=C^\infty(GxG), which is commutative associative in U(g+g+\bar g +\bar g), treat \bar g+ \bar g as the spectator h; the composition of the original product with the action of J makes A to an associative (but not commutative) algebra in U(g+\bar g+\bar g). This is the quantization of the moduli space of a triangle (with one vertex marked with + and two with -)

2. if spectator Lie algebras don't sound so simple, choose any coisotropic C1,C2\subset G, and start with C^infty (G/C1 x G/C2) as a commutative associative algebra in U(g+g)-Mod^Phi.