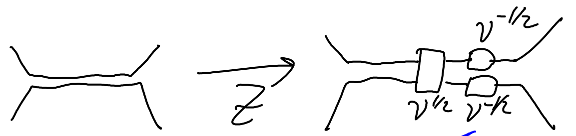
The LMMO Normalization

October-16-10
10:07 AM

Well known it is, that there is an ivariant $Z : KTG's \to \mathcal{A}$ which intertwines the edge-delete operation, and which nearly-intertwines the edge unzip operations :

$$Z(u_e(\gamma)) = \nu_{e'}^{-1/2} \nu_{e''}^{-1/2}\, u_e\, \nu_e^{1/2} \cdot Z(\gamma)$$

or



Question. Is there an invariant $\check{Z}$, defined only on links and on links with a single knotted dumbell ($O\overset{e}{—}O$), which is strictly homomorphic under both unzip and delete?

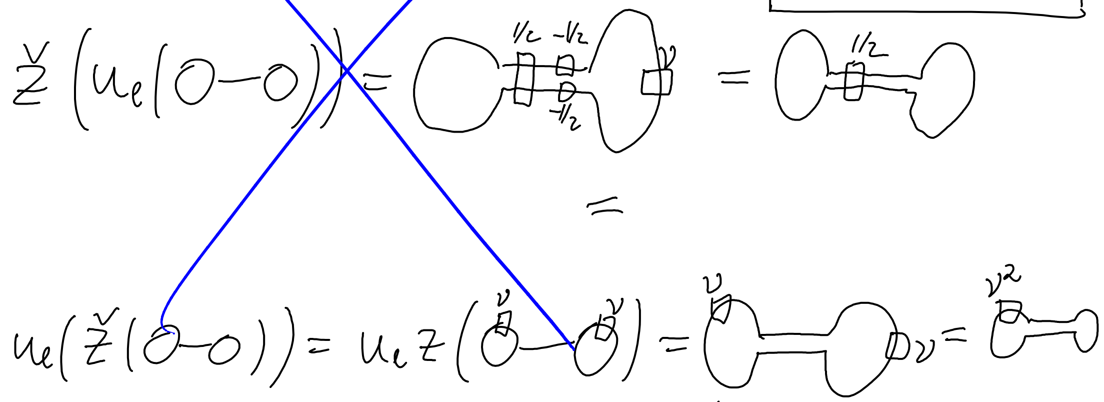
silly. That's not what LMMO need?

Solution (LMMO). Let $\check{Z}$ be Z with an extra factor of ν on each edge, except e.

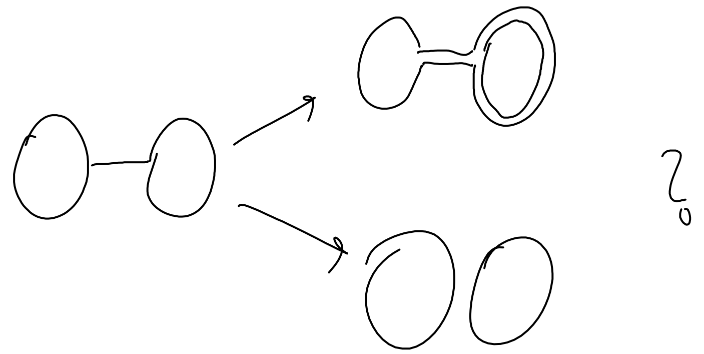
"Delete" works with no difficulty.

Everything rel. to $Z(O—O)$

unzip:



Question. Is there an invariant $\check{Z}$, defined only on links and on links with a single knotted dumbell, which is strictly homomorphic under both delete and "slide":



The slide.