

The "forgetful" or "fiber" functor:

$$F(V) = \text{Hom}(\mathbb{Q}G, V) = \text{Hom}(U(g), V)$$

(more precisely, it is called "the fiber functor" when combined w/ the tensor structure)

A "tensor structure":

Functorial isomorphisms $J_{VW}: F(V) \otimes F(W) \rightarrow F(V \otimes W)$

$$\begin{array}{ccc} \text{s.t.} & F(U) \otimes F(V) \otimes F(W) & \xrightarrow{1 \otimes J_{VW}} F(U) \otimes F(V \otimes W) \\ & \searrow J_{U,V} \otimes 1 & \searrow J_{U,V \otimes W} \\ & F(U \otimes V) \otimes F(W) & \xrightarrow{J_{U \otimes V, W}} F((U \otimes V) \otimes W) \\ & & \nearrow F(\Phi) \\ & & F(U \otimes (V \otimes W)) \end{array}$$

Endomorphisms of the Fiber functor:

$H = \text{End}(F)$ is a Hopf algebra.

$$H^{\otimes 2} = \text{End}(F^{\otimes 2}: \mathcal{M} \times \mathcal{M} \rightarrow \text{Vect})$$

Question. Does this yoga have a counterpart in knot theory?