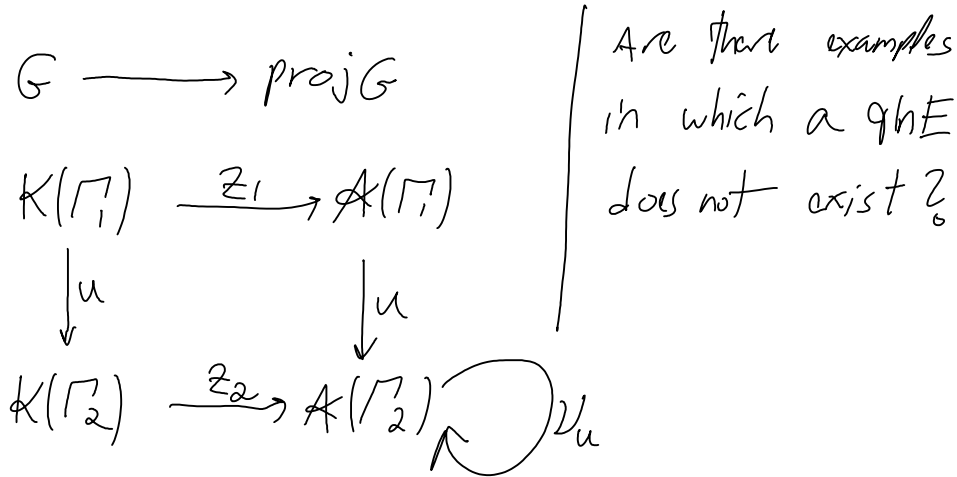


Is there any "universal" intermediate between "homomorphic expansions" and "expansions"?



Given a quasi-homomorphic expansion  $Z$ , is there always a "central extension" of the source algebraic structure on which  $Z$  becomes an ordinary expansion?

Is there a qhE for  $n/g$ -tangles?

Can we construct a qhE for the braid group, without using high-tech?

For braids, qhE would mean:

$$Z(B_1, B_2) = \mathcal{V}(Z(B_1) \cdot Z(B_2))$$

Taking  $B_1 = I$ , we get

$$Z(B) = \mathcal{V}(Z(I) \cdot Z(B))$$

$$\mathcal{V}^{-1}(Z(B)) = Z(I) \cdot Z(B)$$

$$\mathcal{V}^{-1}(D) = Z(I) \cdot D$$

$$\mathcal{V}(D) = Z(I)^{-1} \cdot D$$

Likewise with  $B_2 = I$  we get

Likewise with  $B_2 = I$  we get

$$\mathcal{V}(D) = D \cdot Z(I)^{-1}$$

$\Rightarrow Z(I)$  must be central, and

$$\mathcal{V}(D) = Z(I)^{-1} \cdot D = D \cdot Z(I)^{-1}$$

$\Rightarrow$  Constructing a qhE doesn't seem easier than constructing a homomorphic expansion.