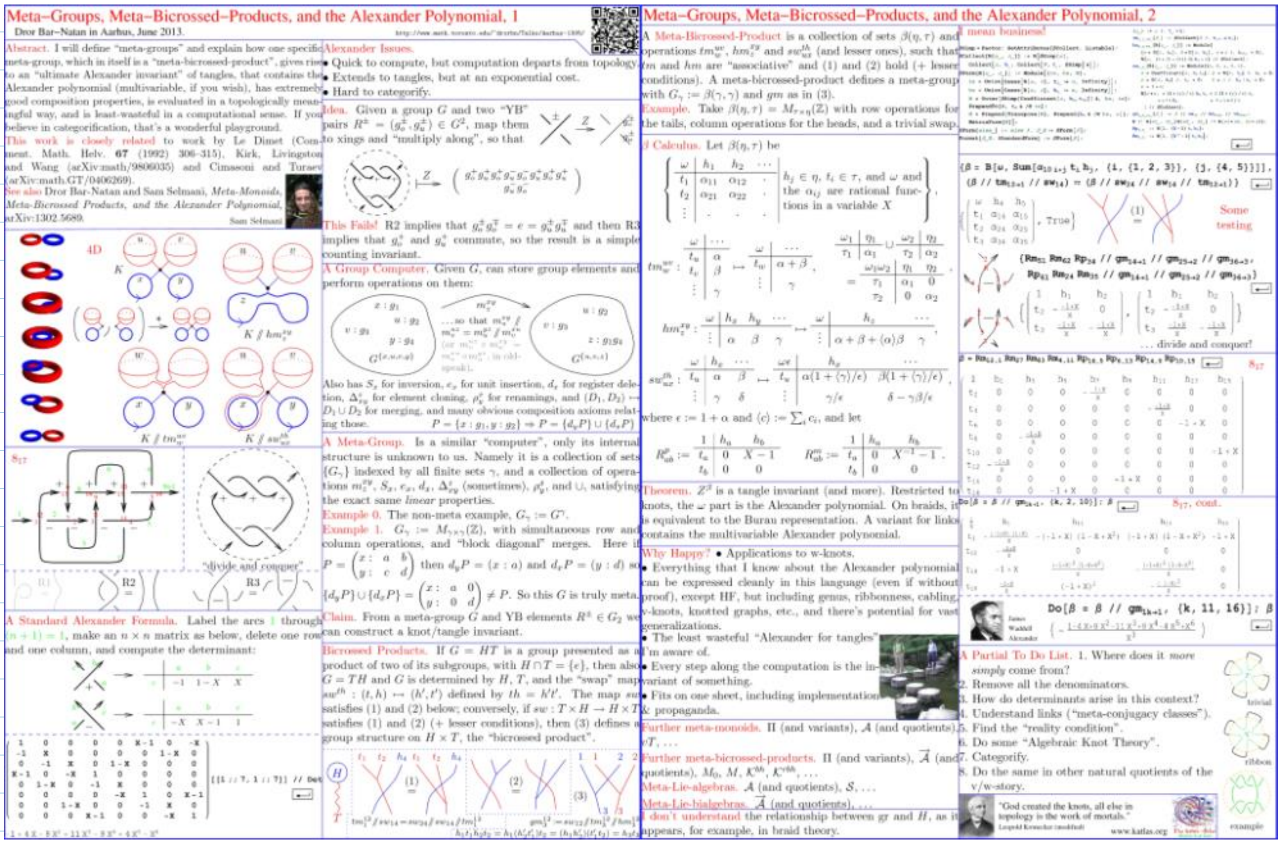
13-Aarhus Day 6: Meta and beta

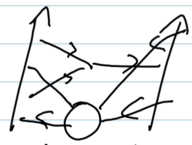
June-02-13
4:03 AM

Optimistic Rough Tentative Plan. Sixth introduction: meta and beta. Then the full Vietnam story. (was the plan for day 7)

Pasted from <http://www.math.toronto.edu/~drorbn/Talks/Aarhus-1305/>

1. The meta/beta story:



2 $wA(\uparrow_n) =$  / $STU_{1,2,3}$, AS, IHX is a co-commutative bi'algebra.

2 in 1 out connected

primitives: diagrams that are connected after removing the skeleton.
= wheels and trees

$0 \to \{\text{wheels}\} \to wP(\uparrow_n) \to \text{trees} \to 0$

$0 \to tr_n \to wP(\uparrow_n) \to \bigoplus_n Lie(n) \to 0$

$tr_n = CW_n$

$CW_n \longrightarrow wT(n) \longrightarrow \bigoplus_n \mathrm{Lie}(n) \to 0$

Also in bi-algebras, $\square Z = Z \otimes Z$ is called "group like", & then $Z = e^{\zeta}$, ζ primitive

Problem: Compute $\zeta(K)$.

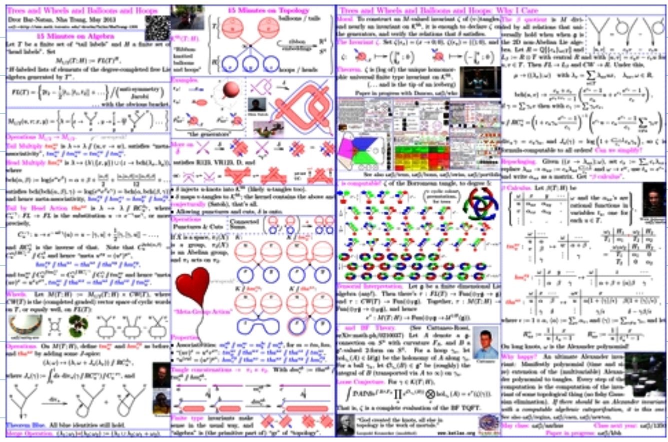
3. From tubes to balloons & hoops

"separating the body from the soul"

" body from shadow".

"uknots = balloons $\ltimes$ hoops"

4 Z for KBH's; ζ is valued in $\mathrm{Lie}(T)^H \times CW(T)$



$$\begin{tikzcd} FL(T) \arrow[rr, shift left, leftarrow, "C_u^{-\gamma}"] \arrow[rr, shift right, "RC_u^{\gamma}"'] \arrow[dr, "\phi"'] & & FL(T) \arrow[dl, "\bar\phi", "u\mapsto\bar u"'] \\ & FL(T\cup\{\bar u\}) \Big/ \left(\begin{array}{c} \bar u = e^{-\operatorname{ad}\gamma} u \\ \text{and / or} \\ u = e^{\operatorname{ad}\gamma}\bar u \end{array} \right) & \end{tikzcd}$$

$$J_u(\gamma) := \int_0^1 ds\, \operatorname{div}_u(\gamma \,/\!\!/\, RC_u^{s\gamma}) \,/\!\!/\, C_u^{-s\gamma}.$$