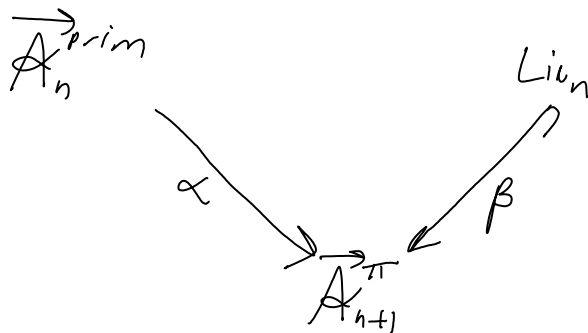


There ought to be a map $\int: \vec{A}_n^{\text{prim}} \rightarrow \text{tdv}_n$.

- Questions
1. Define it precisely.
 2. Compute $\ker \int$. (Or at least, find lots of relations in $\ker \int$.)

Construction of D

Realized in [Homotopy for virtual](#).

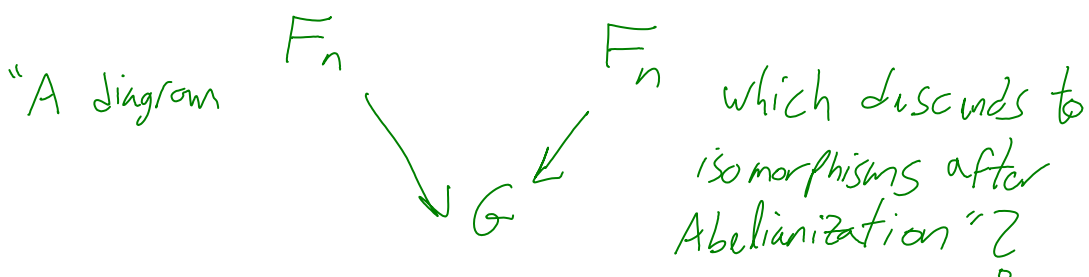


For $D \in \vec{A}_n^{\text{prim}}$ & $x \in \text{Lie}_n$, $\int_D x := \beta^{-1}[\langle D, \beta x \rangle]$

The trick is to find the relations to impose on \vec{A}_{n+1}^{π} so that this will make sense.

Aside - in the non-arrow case, the only relation required is homotopy on the last strand; and $\ker \int$ seems to be "all loop diagrams"

Aside - Is there an Artin Theory for "homology Braids"? Or how about a group theoretic statement:



Perhaps replace groups by quandles?

Speculative moral: Perhaps the whole relationship between knot theory and Lie algebras (and between knot theory and quantum groups) is bogus; it simply factors through the relationship of knot theory with group theory (or quandle theory) via the fundamental group of the complement. So perhaps I should forget about knot theory and study group theory.

First Guess \vec{A}_{n+1} would be acyclic arrow diagrams each component of which touches strand $(n+1)$ at most once.