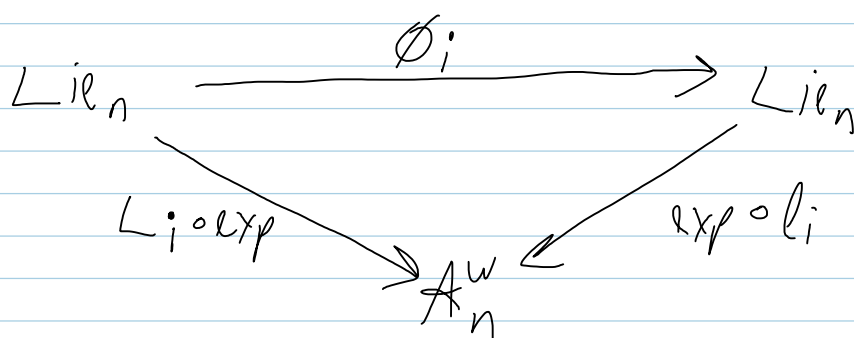I should figure out once and for all the precise relationship between "my" J_u and the Alekseev-Torossian J.

1. Is CC_u^λ computable in terms of $tder/TAut$?

2. Is J_u computable in terms of J?

The two pictures are not the same. In my picture trees are "distilled"; in the $tder/TAut$ picture heads and tails are mixed together.

Question. What's ϕ_i in the diagram below?

$$
\begin{array}{ccc}
Lie_n & \xrightarrow{\phi_i} & Lie_n \\
 & A_n^w &
\end{array}
$$

$l_i \circ \exp$ $\exp \circ l_i$

A_n^w

Here l_i is "put the head below the tails on strand i"

and L_i is its obvious extension, "put all heads below all tails on strand i"

Wild question. Is ϕ_i related to the K/J renormalization that occurs in β-calculus? Does ϕ_i make the BCH formula much more

pleasant?

Is it related to the "Euler method"?