

Dror Bar-Natan: Academic Pensieve: 2017-08:

Emails from Roland

August 23, 2017 10:58 PM

Dear Dror,

I believe normal ordering will yield a topology on our yax algebra and doubles in general.

Referring to the presentation of the $U_{\{h;\alpha,\beta\}}$ algebra on your monoblog,

set $h = \alpha = 1$, we don't need them.

Now consider the algebra U generated by y, a, x, β, T .

We can (and do) order every monomial in the standard order y, a, x, β, T .

This extends to a linear bijection $O: Q[[Y, A, X, B, T]] \rightarrow U$

sending $Y^k A^l X^m B^n T^o$ to $y^k a^l x^m \beta^n T^o$

The map O introduces the usual topology on the power-series ring into U .

That should do it, or am I missing something?

Best,
Roland

1. Non-canonical (depends on the ordering).
2. Must have a PBW theorem or else O might collapse

Dear Dror,

I found a pleasing algebra automorphism Φ which in the $U_{\{h,\alpha,\beta\}}$ conventions of the monoblog reads:

$$\Phi(x) = -A^{-1} y$$

$$\Phi(y) = -B^{-1} x$$

$$\Phi(a) = -a$$

$$\Phi(b) = -b$$

Nice!

Enjoy Switzerland.

Best,
Roland