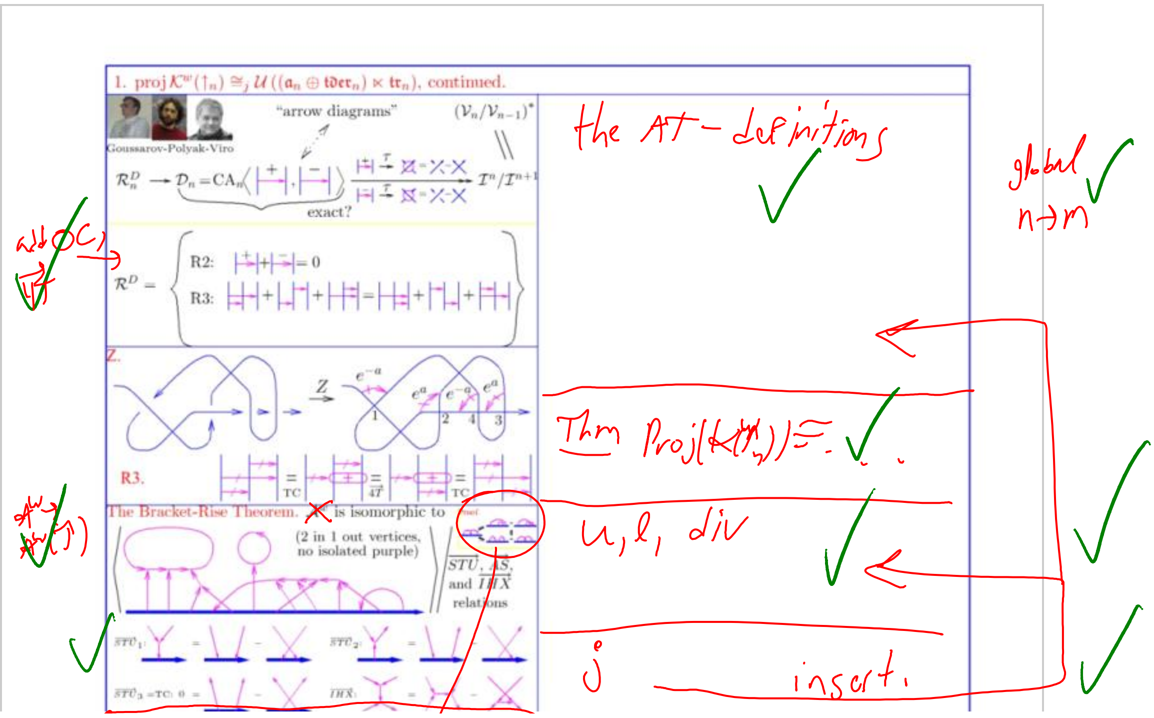
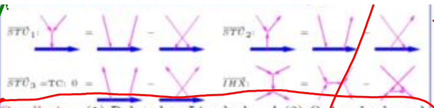
Montpellier Day -10

May-24-10
4:29 PM

Days are counted ..., -3, -2, -1, day 1, day 2, ...

Pasted from <http://www.math.toronto.edu/~drorbn/Talks/Montpellier-1006/index.html>





Corollaries. (1) Related to Lie algebras! (2) Only wheels and isolated arrows persist.

Proof.

$\mathcal{D}^w_n = \ldots \qquad \operatorname{Prim} \mathcal{A}^w(\uparrow_n) \cong \mathcal{D}_n$

The co-product, primitives

$0 \to \{\text{wheels}\}_n \to P\mathcal{A}^w(\uparrow_n) \underset{\ell}{\overset{u}{\rightleftarrows}} \{\text{trees}\}_n \to 0$

j insert.

differential operators & div

A bit on $\mathfrak{sder}_n$.

2. w–Knots, Alekseev–Torossian, and baby Etingof–Kazhdan

I understand Drinfel'd and Alekseev–Torossian, I don't understand Etingof–Kazhdan yet, and I'm clueless about Kontsevich

Dror Bar-Natan, Montpellier, June 2010, http://www.math.toronto.edu/~drorbn/Talks/Montpellier-1006/

the vertices, the cap, their relations

$\mathcal{A}(\Upsilon\uparrow) \cong \mathcal{A}(\uparrow\uparrow\uparrow)$

The unary ops

statement $\exists$ homomorphic $K^w \to \mathcal{A}^w$

Topological

combinatorial

The AT statement

equivalence.

Some A-T Notions: $Lie_n = Lie(x_1, \dots, x_n)$

$U(lie_n) = Ass_n$

$tr : Ass_n^+ \longrightarrow tr_n = Ass_n^+ / ab = ba$

spaces are gothic except Ass_n

$der_n = der(Lie_n)$ $\qquad a_n = Vect\langle x_1, \dots, x_n \rangle$

$tder_n = \{u \in der_n : \exists a_i \text{ s.t. } u(x_i) = [x_i, a_i]\}$,

so as vector spaces, $u \leftrightarrow (a_1, \dots, a_n)$ is

$$a_n \oplus tder_n \cong \oplus_n Lie_n$$

$$div : u = (a_1 \dots a_n) \mapsto \sum_{k=1}^{n} tr(x_k(\partial_k a_k))$$

where for $a \in Ass_n^+$, $\partial_k a \in Ass_n$ is determined by

$$a = \sum_{k=1}^{n} (\partial_k a) x_k$$