Severa: Rational Drinfeld associators and their denominators

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$\phi \in K\langle\langle x, y\rangle\rangle$ s.t.

1. $\phi = \exp(\text{Lie Series}) \Leftrightarrow \Delta\phi = \phi\otimes\phi$ alg. eqn's.
2. $\phi(x,y) = \phi(y,x)^{-1}$
3. 5-gon 4. 6-gon.

Used: 1. Deformation quantization / formality. (Tamarkin)
2. Quantization of Lie-bialgebras / E-K.
3. Knot theory. 4. Lie theory.

An associator is a morphism

$$PaB_n \longrightarrow T_n(K)$$

which preserves the operad structure on both sides.

Thm $\exists$ rational Drinfel'd associator s.t.

$$\nu_p(\deg n \text{ coeffs of } \phi) \leq \frac{p}{(p-1)^2} n - \frac{1}{p-1}$$

Note $\nu_p(n!) \leq \frac{1}{p-1} n - \frac{1}{p-1}$