

Monday-2 AKT on 140113: The Kauffman Bracket and the Jones Polynomial

January-12-14 7:21 PM

HW on web!

↳ The Kauffman bracket starting with

trefoil along...

$$\langle \nearrow \searrow \rangle \rightarrow A \langle \searrow \rangle + B \langle \nearrow \rangle \quad \langle \bigcirc \bigcirc \rangle \rightarrow d \langle \bigcirc \rangle$$

0-smoothing 1-smoothing

$$\therefore \rightarrow B = A^{-1}, \quad d = -A^2 - \frac{1}{A^2}$$

$$\langle \uparrow \downarrow \rangle = A \langle \bigcirc \rangle + A^{-1} \langle \bigcirc \rangle = -A^3 \langle \bigcirc \rangle$$

$$J(K) := (-A^3)^{-w(K)} \frac{\langle K \rangle}{d} \quad / \quad A \rightarrow q^{-1/4}$$

2. "The Jones Skein relation"

$$J(\nearrow \searrow) = -q^{3/4} (q^{-1/4} \langle \searrow \rangle + q^{1/4} \langle \nearrow \rangle)$$

$$J(\searrow \nearrow) = -q^{-3/4} (q^{-1/4} \langle \nearrow \rangle + q^{1/4} \langle \searrow \rangle)$$

$$\Rightarrow q^{-1} J(\nearrow \searrow) - q J(\searrow \nearrow) = (q^{1/2} - q^{-1/2}) \langle \nearrow \searrow \rangle$$

not done

3. HOMFLYPT:

$$aH(\nearrow \searrow) - a^{-1}H(\searrow \nearrow) = zH(\bigcirc \uparrow)$$

4. Programming as ever.