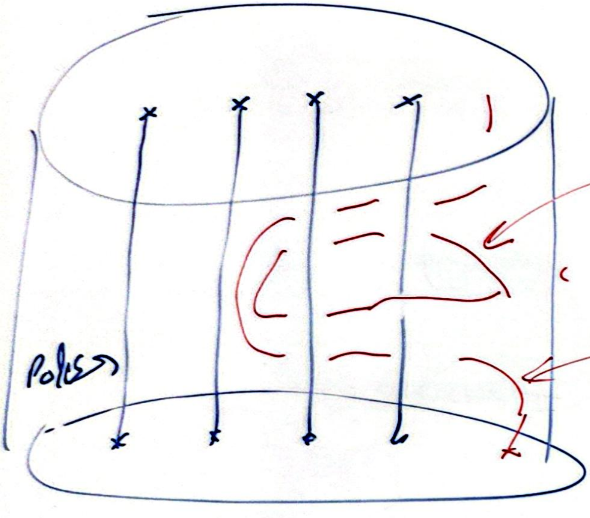
Playground



$Z : \mathcal{K} \longrightarrow \mathcal{A}$

$\downarrow \qquad\qquad \downarrow$

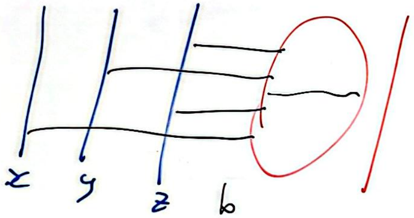
$Z^{em} : \mathcal{K}^{em} \longrightarrow \mathcal{A}^{em} = \mathcal{A} / \ldots = 0 \qquad \ldots = b \ldots$

$\mathcal{K} / \ldots = 0$

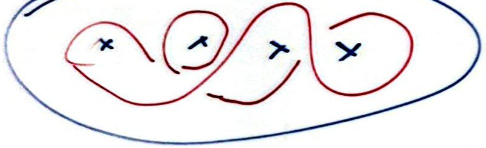
$\ldots = b \ldots$

"~~HOMFLY~~" $b^2 = 0$

Alexander

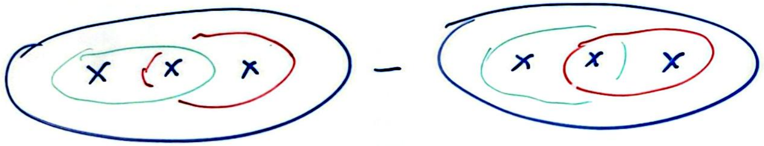


PDS_4

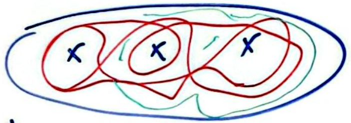


$\times I$

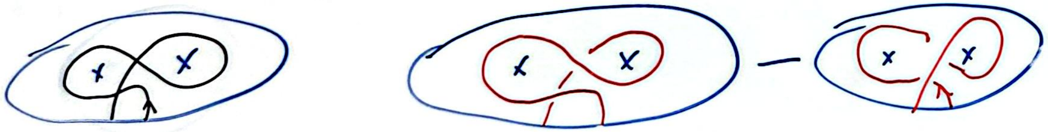
bracket



Dead knots $\ldots = \ldots - \ldots = 0$

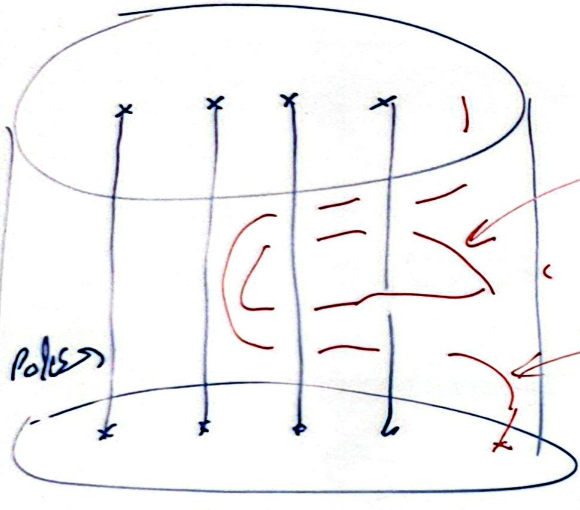


Co-bracket



$= b \cdot$ Tur cobracket

Playground



$Z : \mathcal{K} \to \mathcal{A} =$

$Z^{em} : \mathcal{K}^{em} \to \mathcal{A}^{em} = \mathcal{A} / \ldots = 0 \qquad \ldots = b \ldots$

$\mathcal{A}^{w} = \ldots \qquad FA_p^{\oplus S^2}$

$\mathcal{A}^{wem} = \ldots \quad FA_p^{\oplus S}$

$\ldots \quad FL_p^{\oplus S}$

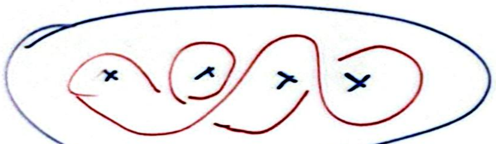
$\mathcal{K} / \ldots = 0$

$\ldots = \ldots - \ldots = b \ldots$

~~"HOMFLY"~~ $b^2 = 0$

Alexander

PDS$_4$



$\times I$

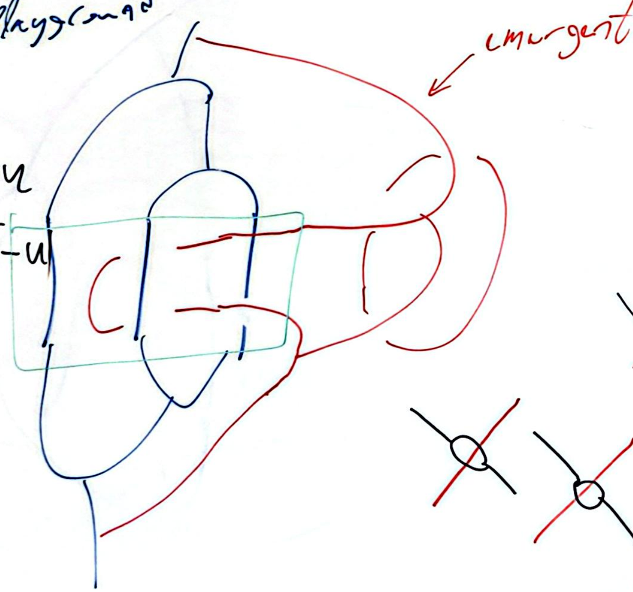
O-U $\xrightarrow{\alpha}$ O-U

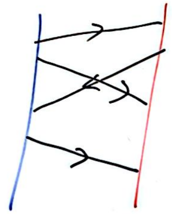
$\| \to \ldots + \ldots$

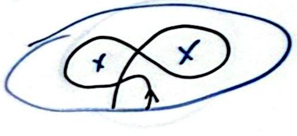
$= (O-V) + (V-U)$

Playground

Dead knots $\ldots = \ldots - \ldots = \ldots$





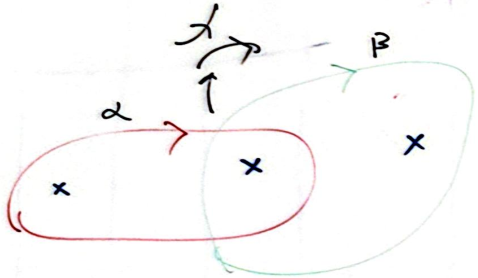


$\ldots - \ldots = \ldots = 0$

$U(Ig) = xxyxx^{x}y^{x}z^{x}$

$[a,b] = ab - ba$

Goldman $\Leftarrow$ Atiyah-Bott



$$\omega = \int_\Sigma \mathrm{Tr}(\delta A \wedge \delta A)$$

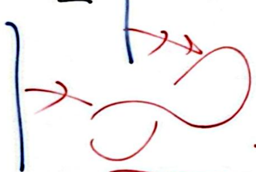
restrict to $\{A, F_A = 0\}$

$$\pi = \int_\Sigma \mathrm{Tr}\left(\frac{\delta}{\delta A} \wedge \frac{\delta}{\delta A}\right)$$

$$\{\mathrm{Tr}(\mathrm{Hol}(A,\alpha)), \mathrm{Tr}(\mathrm{Hol}(A,\beta))\}$$

$$\|$$

$$\sum_{p \in \alpha \cap \beta} \varepsilon_p \mathrm{Tr}(\mathrm{Hol}(A, \alpha \#_p \beta))$$



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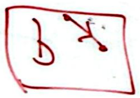
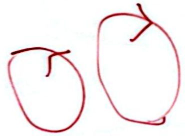




$$\int_\Sigma \mathrm{Tr}\left(\frac{\delta}{\delta a} \frac{\delta}{\delta a^*}\right)$$

$A = a + a^*$

$\cap \quad \cap$

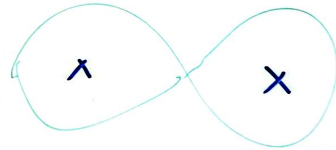
$\mathfrak{g} \quad \mathfrak{g}^*$

Turaev $\Leftarrow$?

$$\Delta(\mathrm{Tr}\,\mathrm{Hol}(A,\alpha)) =$$

$$= \sum_{p \in \alpha \cap \alpha} \varepsilon_p (\mathrm{Tr}\,\mathrm{Hol}(A, \alpha'_p)) \wedge \mathrm{Tr}\,\mathrm{Hol}(A, \alpha''_p)$$

$$I\mathfrak{g} = \underset{x}{\mathfrak{g}} \oplus \underset{x^*}{\mathfrak{g}^*}$$



$\mathrm{Tr}\,\mathrm{Hol}(A,\alpha) = \mathrm{Tr}(x\, x\, x^* x^* \dots x)$

$\mathfrak{gl}(N)[\varepsilon] \cong \mathfrak{gl}(N) \oplus \mathfrak{gl}(N)\varepsilon$ odd

$\varepsilon^2 = 1$, $\varepsilon =$ odd

$a + a^*\varepsilon$

$\circ\mathrm{Tr}(a + a^*\varepsilon) := \mathrm{Tr}\, a^*$