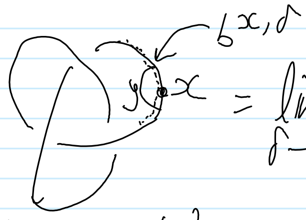
Wednesday-4 AKT on 140129: Scratch

January-28-14 9:06 AM

$$\eta(\gamma) := \int_{\tilde{C}_2(S^1)} \Phi^* w \qquad sl_2(\gamma, \nu) = l(\gamma, \gamma + \epsilon\nu)$$

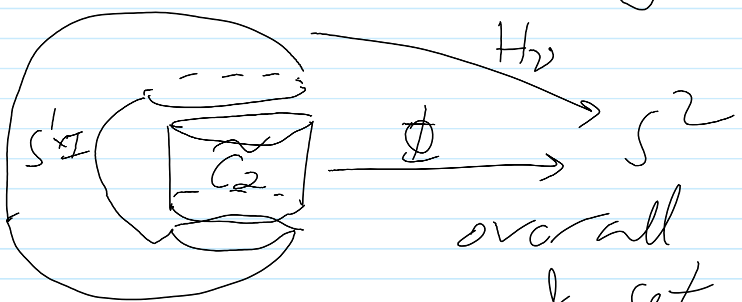
$$\eta(\gamma) - sl_2(\gamma, \nu) = $$  $$= \lim_{\delta \to 0} \int_{S^1_x} \int_{b_y^{x,\delta}} \begin{matrix}\text{pull back}\\ \text{of } w\end{matrix} =$$

$$= \int_{S^1_x} \left(\begin{matrix}\text{a bd quantity } \lambda \\ \text{computable from } \gamma, \nu \text{ near } x.\end{matrix} \right)$$

1. if $\nu = \frac{\ddot{\gamma}}{\| \ \|}$ "the normal of γ" Then λ is the Frenet–Serret torsion τ: with $n = \ddot{\gamma}/\|\ \|$, $\tau = \dot{n} \cdot (\dot{\gamma} \times n)$

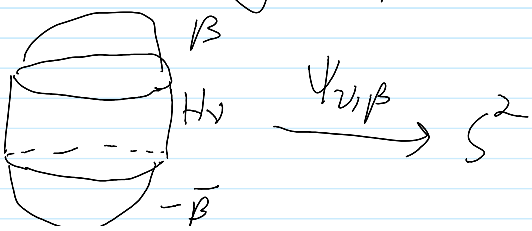
on board

2. Otherwise, λ is "The drift rel. to the Riemannian connection".
3. An alternative definition of sl_2: a ν defines a homotopy $H_\nu \dot{\gamma} \to -\dot{\gamma}$,



overall get $\Phi_\nu : T^2 \to S^2$ & set $sl_2 = \deg \Phi_\nu$

There is a pairing $\langle \nu, \beta \rangle \in \mathbb{Z}$ between framings and swaddling maps:



$$\langle \nu, \beta \rangle = \deg \Psi_{\nu,\beta}$$

$\longrightarrow S \qquad \langle v, \beta \rangle \quad \cdot \int$

<u>Thm</u> By declaring $\beta \leftrightarrow v \Leftrightarrow \langle v, \beta \rangle = 0$, there is a bijection between (homotopy classes of) swaddling maps and odd framings. If $\beta \leftrightarrow v$, then $sl_1(\gamma, v) = sl_2(\gamma, \beta)$.

<u>Proof</u> HW.

<u>Blatantly False theorem.</u>

$$Z_1(\gamma) = \sum_{D \in \{\ \}} \frac{D}{|\mathrm{Aut}(D)|} \int_{C_D(\mathbb{R}^3, \gamma)} \prod_{e \in D} \Phi_e^* W$$

is knot invariant. Furthermore

1. It is a UFTI/Expansion, hence solving the problem to be posed on Monday.

2. It is the perturbative evaluation of the CS QFT, to be defined on Friday.