Colored knot Floer homology

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Joint with Eugene Gorsky and Beibei Liu

Alexander-Conway polynomial

$$\Delta\left(\times\right) - \Delta\left(\times\right) = \left(t^{\frac{1}{2}} - t^{-\frac{1}{2}}\right) \Delta\left(\right)\left(\right)$$

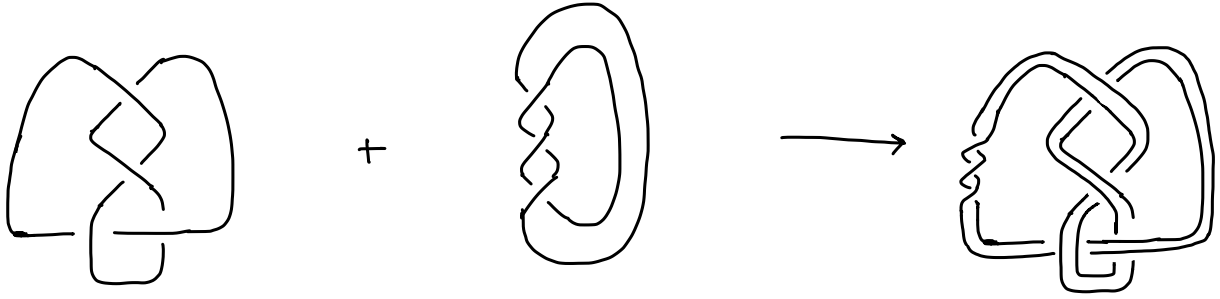
$$\Delta\ (\text{Unknot}) = 1$$

Jones polynomial

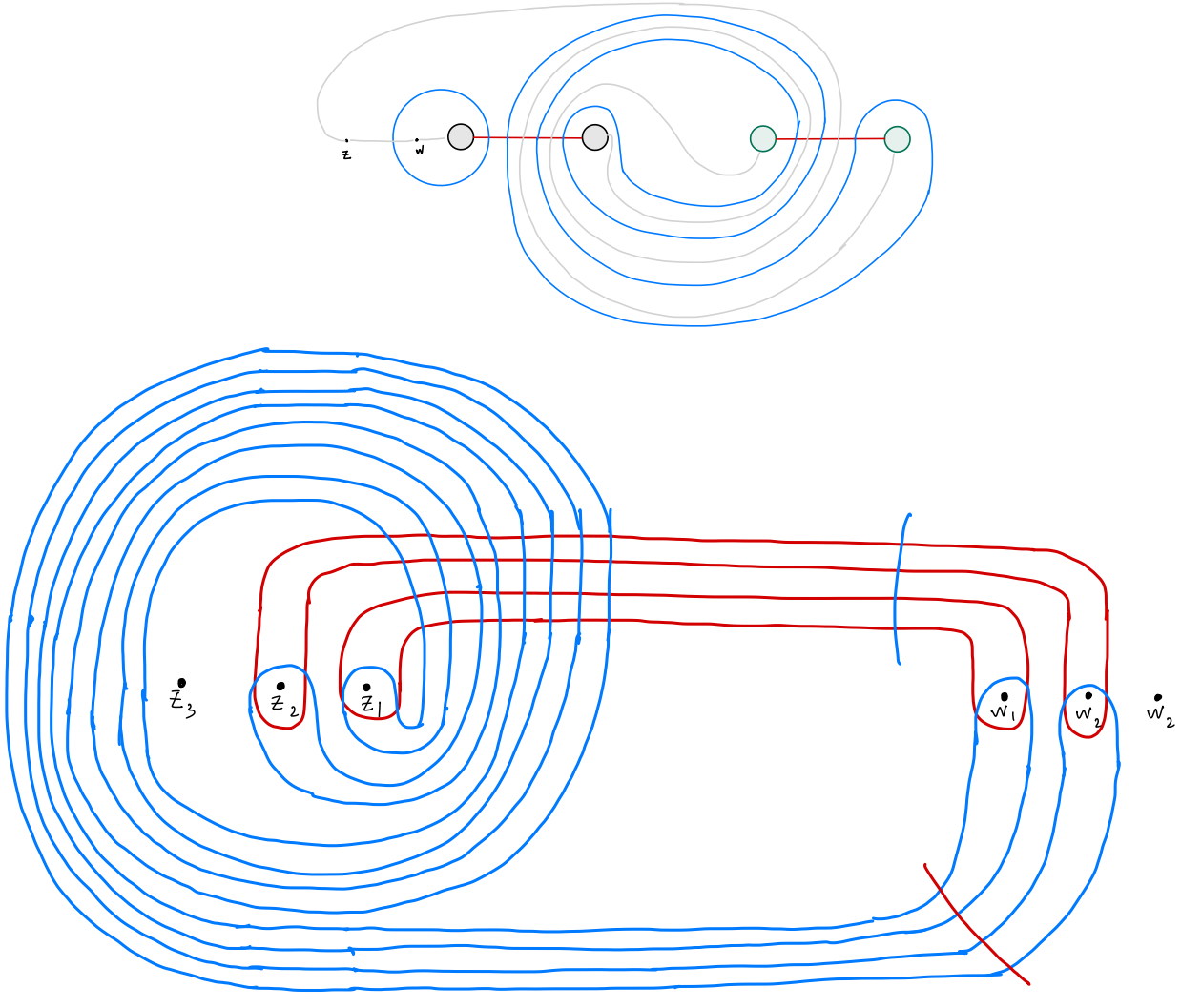
$$t^{-1} V\left(\times\right) - t\, V\left(\times\right) = \left(t^{\frac{1}{2}} - t^{-\frac{1}{2}}\right) V\left(\right)\left(\right)$$

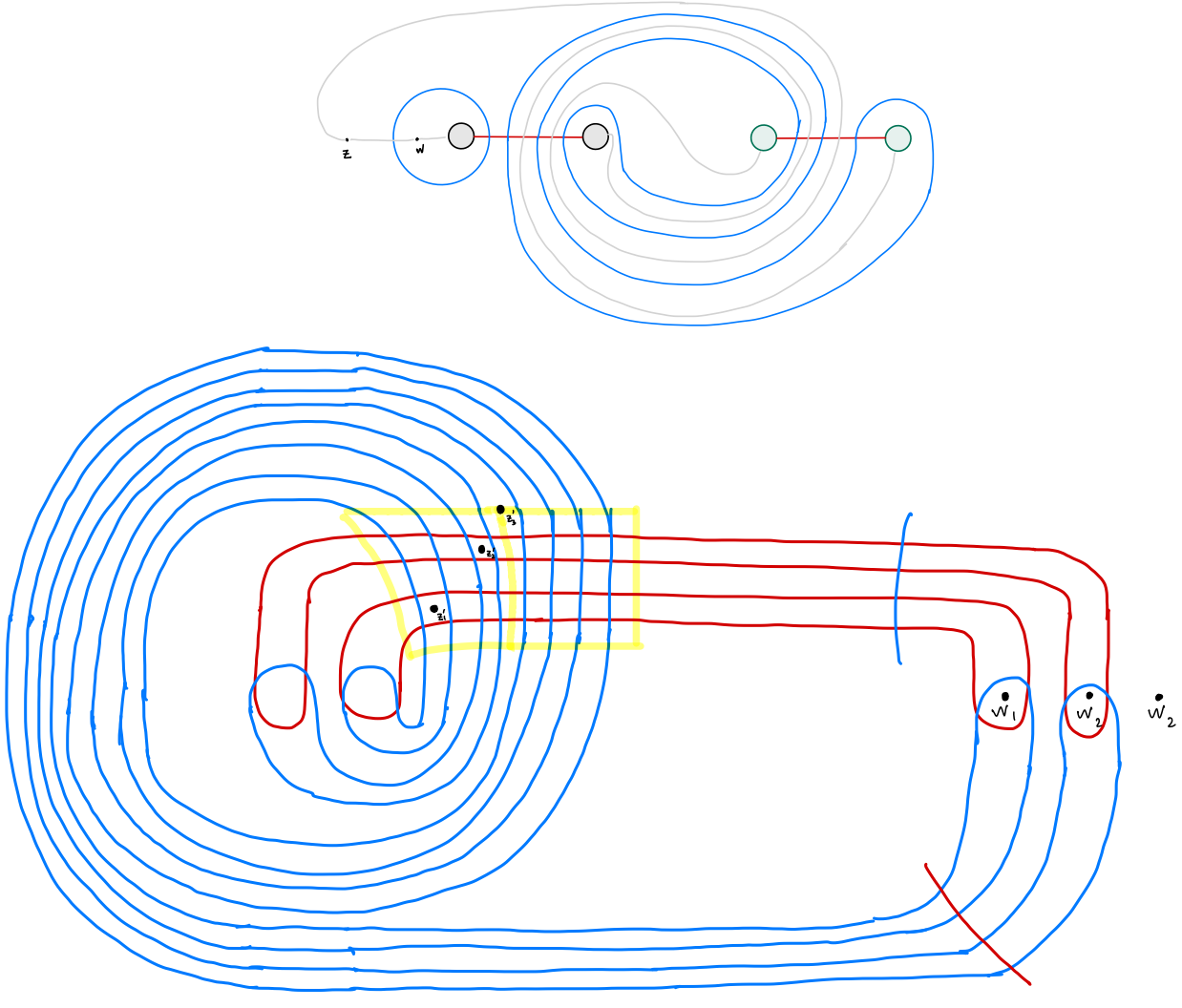
$$V\ (\text{Unknot}) = t^{\frac{1}{2}} + t^{-\frac{1}{2}}$$

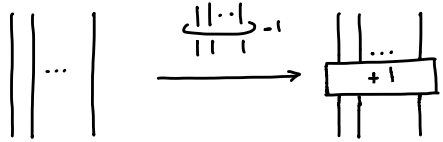
Cable of a knot

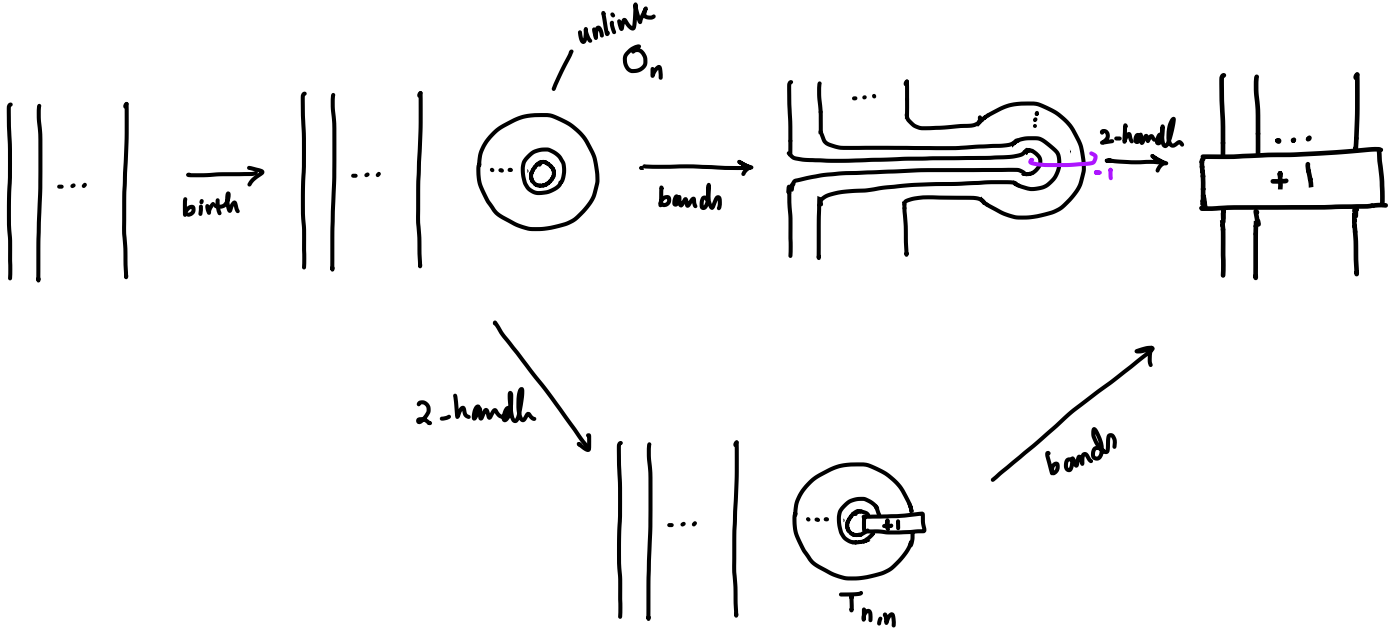


* If $l = mn$, $K_{n,l}$: n- component link

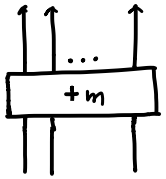

z
w
z_3
z_2
z_1
w_1
w_2
w_2


z
w
z_3
z_2
z_1
w_1
w_2
w_2


-1
+1

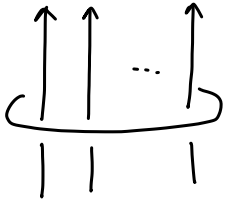
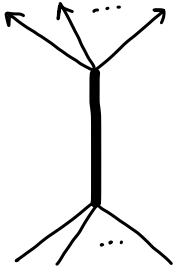

unlink
O_n
birth
bands
2-handle
-1
+1
2-handle
bands
+1
$T_{n,n}$

Remark L : n component link 

, L_m : 

$$\varinjlim \left[\widehat{HFL}^{stab}(L) \xrightarrow{\varphi_0} \widehat{HFL}^{stab}(L_1) \xrightarrow{\varphi_0} \widehat{HFL}^{stab}(L_2) \xrightarrow{\varphi_0} \cdots \right] = H_n(L, U)$$

✓ Manlov gr
✓ Alexander gr
✓ $\mathcal{A}_n^{col}$ - module

 $\rightsquigarrow$ HF () : module over $\mathbb{F}_2[w_1, \dots, w_{n+1}]$

$\cong$

$\mathcal{A}_n^{col}$

(A. Ettekhany)

? $\mathcal{H}_n(L, U)$

Thank you!