WT=Wishful Thinking := The boundary of configuration spaces $C_D$ consists only of the principal faces, in which just two points cluster together.

**Theorem (WT)** The following diagram commutes

$$
\begin{array}{ccc}
\overline{D}^*: & \ldots & \overline{D}^m \longrightarrow \overline{D}^{m+1} \\
\downarrow & & \downarrow \\
\mathcal{J}^*: & \ldots & \mathcal{J}^m(\Gamma) \longrightarrow \mathcal{J}^{m+1}(\Gamma)
\end{array}
$$

"The graph complex"

"Knot space cohomology"

Where $\Gamma$ is the space of smooth $Y: S^1 \times [0,1] \subset \mathbb{R}^3$, $\mathcal{J}^*(\Gamma)$ is the de-Rham complex of $\Gamma$.

$$
\overline{D}^m_n = \left\langle D = \begin{array}{c}
\text{connected graph}
\end{array} \right\rangle
$$

$m\in M(\overline{D}) = \sum_{v \in V(0)} (\deg v - 3) = 2|E(\overline{D})| - 3|V(\overline{D})|

n\in M(\overline{D}) = -\chi(\overline{D}) = |E(\overline{D})| - |V(\overline{D})|

\text{directed internal edges} / \leftrightarrow = 0

\text{oriented vertices alternating red/orange}/alternate red/orange

\text{but no bubbles}

$$
\begin{array}{c}
\text{d: } \overline{D}^m \rightarrow \overline{D}^{m+1} \text{ is } \partial D : = \sum_{e \in E(\overline{D})} \text{ non-chord not part of a multiedge} \text{ e}\text{e}\text{e}
\\
\text{1. signed remove } v_0 \\
\text{2. signed remove } v_i \\
\text{3. signed insert } v_i
\end{array}
$$

$$
\begin{array}{c}
\text{I: } \overline{D}^m \rightarrow \mathcal{J}^m(\Gamma) \text{ is } \text{T}^* D^* W E_i(D), \text{ where}
\\
C_D^* \longrightarrow \text{T}^* D^* \longrightarrow (5.2) E_i(D)
\end{array}
$$

Points to note: 1. signs work out! 2. Chords work out? 3. Double edges work out?