LOT groups

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Minimal Seifert manifolds for higher ribbon knots
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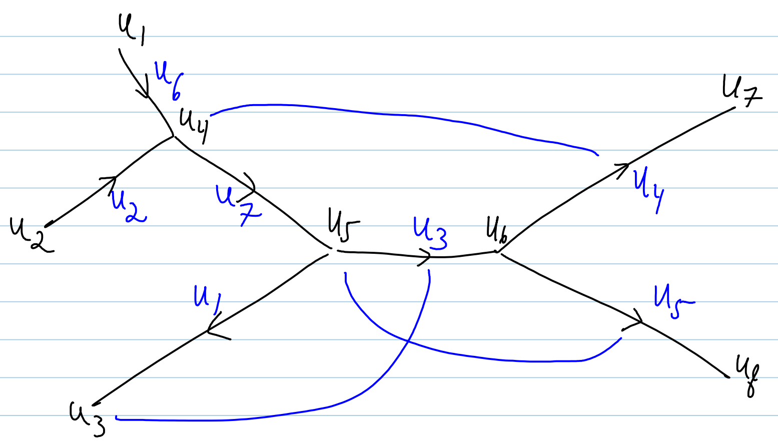
2 LOTs and higher ribbon knots

A *labelled oriented tree* (LOT) is a tree Γ, with vertex set $V = V(\Gamma)$, edge set $E = E(\Gamma)$, and initial and terminal vertex maps $\iota, \tau \colon E \to V$, together with an additional map $\lambda \colon E \to V$. For any edge e of Γ, $\lambda(e)$ is called the *label* of e. In general, one can consider LOTs of any cardinality, but for the purposes of the present paper, every LOT will be assumed to be finite.

To any LOT Γ we associate a presentation $\tau(e) = i(e)^{\lambda(e)}$

$$\mathcal{P} = \mathcal{P}(\Gamma) : \quad \langle\, V(\Gamma) \mid \iota(e)\lambda(e) = \lambda(e)\tau(e)\,\rangle$$

of a group $G = G(\Gamma)$, and hence also a 2–complex $K = K(\Gamma)$ modelled on $\mathcal{P}$. The 2–complex K is a spine of a *ribbon disk complement* $D^4 \backslash k(D^2)$ [7], that is the complement of an embedded 2–disk in D^4, such that the radial function on D^4 composed with the embedding k is a Morse function on D^2 with no local maximum. Conversely, any ribbon disk complement has a 2–dimensional spine of the form $K(\Gamma)$ for some LOT Γ.



$u_5 \xrightarrow{u_3} u_6 \longrightarrow u_6 = u_5^{u_3}$

. . . . "LOT groups & higher ribbon knot groups are precisely the same thing".

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can/should be generalized to forests. "LOF groups".