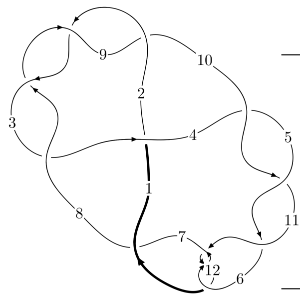
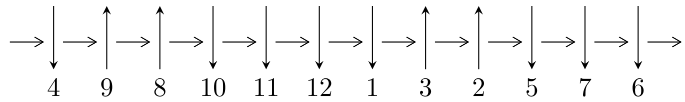
$12a_{1158}$ ($K12a_{1158}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$7,11 \xrightarrow[c_{11}]{} 12 \xrightarrow[c_6]{} 6 \xrightarrow[c_{12}]{} 1 \xrightarrow[c_7]{} 8 \xrightarrow[c_5]{} 5 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_4]{} 4 \xrightarrow[c_1]{} 2 \xrightarrow[c_3]{} 3 \xrightarrow[c_9]{} 9 \gg c_2, c_8$$

Ideals for irreducible components[2] of $X_{\mathbf{par}}$

$$I_1^u = \langle u^{38} - u^{37} + \cdots - u - 1\rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 38 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $I_1^u = \langle u^{38} - u^{37} + \cdots - u - 1 \rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^5 - 2u^3 - u \\ -u^7 - 3u^5 - 2u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^3 + 2u \\ u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^6 - 3u^4 - 2u^2 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^9 - 4u^7 - 5u^5 + 3u \\ -u^9 - 3u^7 - 3u^5 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{22} - 9u^{20} + \cdots + 4u^2 + 1 \\ -u^{22} - 8u^{20} + \cdots - 4u^4 + 3u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{21} - 8u^{19} + \cdots - 4u^3 + 3u \\ -u^{23} - 9u^{21} + \cdots + 4u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{37} - 14u^{35} + \cdots + 10u^3 - u \\ -u^{37} + u^{36} + \cdots - u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{36} + 4u^{35} - 56u^{34} + 52u^{33} - 352u^{32} + 304u^{31} - 1276u^{30} + 1024u^{29} - 2804u^{28} + 2080u^{27} - 3336u^{26} + 2240u^{25} - 364u^{24} + 36u^{23} + 5244u^{22} - 3388u^{21} + 7232u^{20} - 4040u^{19} + 1692u^{18} - 560u^{17} - 5000u^{16} + 2612u^{15} - 4528u^{14} + 1744u^{13} + 384u^{12} - 536u^{11} + 2024u^{10} - 736u^9 + 416u^8 + 104u^7 - 368u^6 + 192u^5 - 84u^4 - 12u^3 + 24u^2 - 12u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{38} - 13u^{37} + \cdots - 3409u + 723$
c_2, c_3, c_8 c_9	$u^{38} + u^{37} + \cdots - u - 1$
c_4, c_5, c_7 c_{10}	$u^{38} + u^{37} + \cdots - 9u - 5$
c_6, c_{11}, c_{12}	$u^{38} - u^{37} + \cdots - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{38} - 27y^{37} + \cdots - 8344645y + 522729$
c_2, c_3, c_8 c_9	$y^{38} + 45y^{37} + \cdots + 3y + 1$
c_4, c_5, c_7 c_{10}	$y^{38} - 47y^{37} + \cdots - 41y + 25$
c_6, c_{11}, c_{12}	$y^{38} + 29y^{37} + \cdots + 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.921549 + 0.026814I$	$19.0082 - 5.9978I$	$-13.8808 + 2.7631I$
$u = 0.921549 - 0.026814I$	$19.0082 + 5.9978I$	$-13.8808 - 2.7631I$
$u = -0.910401 + 0.016742I$	$-11.94600 + 3.74112I$	$-12.20309 - 3.92212I$
$u = -0.910401 - 0.016742I$	$-11.94600 - 3.74112I$	$-12.20309 + 3.92212I$
$u = 0.902816$	-9.44212	-8.29230
$u = -0.295584 + 1.071570I$	$-8.32513 - 0.58329I$	$-10.41542 - 0.50010I$
$u = -0.295584 - 1.071570I$	$-8.32513 + 0.58329I$	$-10.41542 + 0.50010I$
$u = 0.220657 + 1.122970I$	$-0.206300 - 0.496209I$	$-9.24627 - 0.65693I$
$u = 0.220657 - 1.122970I$	$-0.206300 + 0.496209I$	$-9.24627 + 0.65693I$
$u = -0.203175 + 1.232690I$	$2.53092 + 2.66616I$	$-0.99392 - 3.01578I$
$u = -0.203175 - 1.232690I$	$2.53092 - 2.66616I$	$-0.99392 + 3.01578I$
$u = -0.033249 + 1.263780I$	$4.26230 + 1.45522I$	$1.17782 - 5.08792I$
$u = -0.033249 - 1.263780I$	$4.26230 - 1.45522I$	$1.17782 + 5.08792I$
$u = 0.247059 + 1.268440I$	$1.06826 - 5.79649I$	$-5.38275 + 8.72620I$
$u = 0.247059 - 1.268440I$	$1.06826 + 5.79649I$	$-5.38275 - 8.72620I$
$u = -0.689534 + 0.138578I$	$-11.05530 + 4.25242I$	$-13.45193 - 4.29885I$
$u = -0.689534 - 0.138578I$	$-11.05530 - 4.25242I$	$-13.45193 + 4.29885I$
$u = 0.087911 + 1.303620I$	$-2.26439 - 2.76931I$	$-3.18945 + 3.50256I$
$u = 0.087911 - 1.303620I$	$-2.26439 + 2.76931I$	$-3.18945 - 3.50256I$
$u = -0.275003 + 1.294930I$	$-6.60950 + 7.69625I$	$-7.73538 - 6.48615I$
$u = -0.275003 - 1.294930I$	$-6.60950 - 7.69625I$	$-7.73538 + 6.48615I$
$u = 0.456153 + 1.266600I$	$-16.6317 + 1.0857I$	$-10.74929 + 0.I$
$u = 0.456153 - 1.266600I$	$-16.6317 - 1.0857I$	$-10.74929 + 0.I$
$u = -0.443090 + 1.271380I$	$-8.05649 + 1.09065I$	$-9.00721 + 0.I$
$u = -0.443090 - 1.271380I$	$-8.05649 - 1.09065I$	$-9.00721 + 0.I$
$u = 0.432187 + 1.283350I$	$-5.45541 - 4.77115I$	$-4.00000 + 2.96319I$
$u = 0.432187 - 1.283350I$	$-5.45541 + 4.77115I$	$-4.00000 - 2.96319I$
$u = 0.626097 + 0.102774I$	$-3.13828 - 2.66124I$	$-12.32538 + 6.29351I$
$u = 0.626097 - 0.102774I$	$-3.13828 + 2.66124I$	$-12.32538 - 6.29351I$
$u = -0.433822 + 1.297770I$	$-7.85499 + 8.54454I$	$-8.56346 - 6.86027I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.433822 - 1.297770I$	$-7.85499 - 8.54454I$	$-8.56346 + 6.86027I$
$u = \quad 0.438829 + 1.307920I$	$-16.3117 - 10.8564I$	$-10.31831 + 5.56337I$
$u = \quad 0.438829 - 1.307920I$	$-16.3117 + 10.8564I$	$-10.31831 - 5.56337I$
$u = \quad 0.354367 + 0.402887I$	$-7.36308 - 1.41419I$	$-9.22771 + 4.33033I$
$u = \quad 0.354367 - 0.402887I$	$-7.36308 + 1.41419I$	$-9.22771 - 4.33033I$
$u = -0.535584$	-1.19956	-7.62450
$u = -0.184566 + 0.290087I$	$-0.222289 + 0.830054I$	$-5.72806 - 8.07347I$
$u = -0.184566 - 0.290087I$	$-0.222289 - 0.830054I$	$-5.72806 + 8.07347I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{38} - 13u^{37} + \cdots - 3409u + 723$
c_2, c_3, c_8 c_9	$u^{38} + u^{37} + \cdots - u - 1$
c_4, c_5, c_7 c_{10}	$u^{38} + u^{37} + \cdots - 9u - 5$
c_6, c_{11}, c_{12}	$u^{38} - u^{37} + \cdots - u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{38} - 27y^{37} + \cdots - 8344645y + 522729$
c_2, c_3, c_8 c_9	$y^{38} + 45y^{37} + \cdots + 3y + 1$
c_4, c_5, c_7 c_{10}	$y^{38} - 47y^{37} + \cdots - 41y + 25$
c_6, c_{11}, c_{12}	$y^{38} + 29y^{37} + \cdots + 3y + 1$