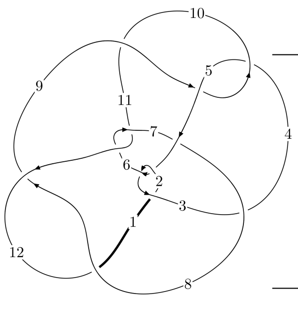
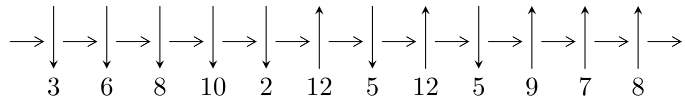
$12n_{0382}$ $(K12n_{0382})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -579753405694973u^{23} - 472990592837092u^{22} + \cdots + 1971269389223473b + 4407120302352329,$$
$$2.83690 \times 10^{15}u^{23} + 6.39000 \times 10^{15}u^{22} + \cdots + 2.16840 \times 10^{16}a - 5.46780 \times 10^{16},\ u^{24} + 2u^{23} + \cdots - 7u - 1$$
$$I_2^u = \langle -u^{14} + u^{13} + 3u^{12} - 4u^{11} - 6u^{10} + 9u^9 + 7u^8 - 13u^7 - 6u^6 + 12u^5 + 2u^4 - 7u^3 + b + u,$$
$$-2u^{14} + u^{13} + 5u^{12} - 4u^{11} - 10u^{10} + 8u^9 + 10u^8 - 10u^7 - 8u^6 + 7u^5 - 2u^3 + u^2 + a - u,$$
$$u^{15} - u^{14} - 3u^{13} + 4u^{12} + 6u^{11} - 9u^{10} - 7u^9 + 13u^8 + 6u^7 - 13u^6 - 2u^5 + 8u^4 - 3u^2 + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 39 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. $I^u_1 = \langle -5.80\times10^{14}u^{23} - 4.73\times10^{14}u^{22} + \cdots + 1.97\times10^{15}b + 4.41\times10^{15},\ 2.84\times10^{15}u^{23} + 6.39\times10^{15}u^{22} + \cdots + 2.17\times10^{16}a - 5.47\times10^{16},\ u^{24} + 2u^{23} + \cdots - 7u - 11\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.130829u^{23} - 0.294688u^{22} + \cdots - 1.59763u + 2.52159 \\ 0.294102u^{23} + 0.239942u^{22} + \cdots + 0.00494916u - 2.23568 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.534965u^{23} - 0.416078u^{22} + \cdots - 0.624684u + 5.43098 \\ -0.310244u^{23} - 0.272323u^{22} + \cdots - 0.324549u + 2.64692 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.224721u^{23} - 0.143755u^{22} + \cdots - 0.300135u + 2.78406 \\ -0.310244u^{23} - 0.272323u^{22} + \cdots - 0.324549u + 2.64692 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.201549u^{23} + 0.249559u^{22} + \cdots - 0.113316u - 1.36979 \\ -0.111431u^{23} - 0.128131u^{22} + \cdots - 0.277454u + 1.05051 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.312979u^{23} + 0.377690u^{22} + \cdots + 0.164138u - 2.42030 \\ -0.111431u^{23} - 0.128131u^{22} + \cdots - 0.277454u + 1.05051 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.0617504u^{23} - 0.0392309u^{22} + \cdots - 2.06682u + 0.542106 \\ 0.194220u^{23} + 0.176940u^{22} + \cdots + 0.957672u - 1.78638 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.0302642u^{23} + 0.0123334u^{22} + \cdots + 0.976733u - 1.03269 \\ 0.119247u^{23} + 0.191200u^{22} + \cdots + 0.994406u - 1.82283 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{2580377549362014}{1971269389223473}u^{23} + \frac{3507150554528052}{1971269389223473}u^{22} + \cdots + \frac{45898132692487883}{1971269389223473}u - \frac{44289338047701926}{1971269389223473}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} + 16u^{23} + \cdots + 819u + 121$
c_2, c_5	$u^{24} + 2u^{23} + \cdots - 7u - 11$
c_3	$u^{24} + 26u^{22} + \cdots + 39u - 11$
c_4, c_9	$u^{24} + u^{23} + \cdots + 51u + 43$
c_6, c_{11}	$u^{24} - 2u^{23} + \cdots - 472u - 163$
c_7	$u^{24} - 3u^{23} + \cdots + 9u + 1$
c_8, c_{12}	$u^{24} + 4u^{23} + \cdots - 138u - 23$
c_{10}	$u^{24} - 7u^{23} + \cdots - 667u + 1849$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} - 8y^{23} + \cdots + 75809y + 14641$
c_2, c_5	$y^{24} - 16y^{23} + \cdots - 819y + 121$
c_3	$y^{24} + 52y^{23} + \cdots - 1015y + 121$
c_4, c_9	$y^{24} + 7y^{23} + \cdots + 667y + 1849$
c_6, c_{11}	$y^{24} + 36y^{23} + \cdots - 234846y + 26569$
c_7	$y^{24} - 47y^{23} + \cdots + 113y + 1$
c_8, c_{12}	$y^{24} + 34y^{23} + \cdots - 65412y + 529$
c_{10}	$y^{24} + 35y^{23} + \cdots - 209766481y + 3418801$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.840681+0.490024I$ $a=-0.724162+0.569771I$ $b=-0.34121+1.49688I$	$-2.96579+0.05300I$	$-5.61914-0.01464I$
$u=-0.840681-0.490024I$ $a=-0.724162-0.569771I$ $b=-0.34121-1.49688I$	$-2.96579-0.05300I$	$-5.61914+0.01464I$
$u=-1.022560+0.295401I$ $a=-1.05742+2.52587I$ $b=\ \ 0.33303+1.71764I$	$-3.54040+2.95826I$	$-5.57765-4.27465I$
$u=-1.022560-0.295401I$ $a=-1.05742-2.52587I$ $b=\ \ 0.33303-1.71764I$	$-3.54040-2.95826I$	$-5.57765+4.27465I$
$u=\ \ 0.962010+0.650431I$ $a=-0.070965-1.233660I$ $b=-0.070549-0.869894I$	$7.79911-2.52001I$	$-0.51262+2.53374I$
$u=\ \ 0.962010-0.650431I$ $a=-0.070965+1.233660I$ $b=-0.070549+0.869894I$	$7.79911+2.52001I$	$-0.51262-2.53374I$
$u=-0.927407+0.744557I$ $a=\ \ 0.713189+0.275798I$ $b=-0.014139-0.602418I$	$8.76252+2.82949I$	$-3.38778-2.96422I$
$u=-0.927407-0.744557I$ $a=\ \ 0.713189-0.275798I$ $b=-0.014139+0.602418I$	$8.76252-2.82949I$	$-3.38778+2.96422I$
$u=\ \ 1.133700+0.502318I$ $a=\ \ 0.53485+1.45879I$ $b=-1.02104+1.23446I$	$-2.58040-6.55097I$	$-3.00232+8.95233I$
$u=\ \ 1.133700-0.502318I$ $a=\ \ 0.53485-1.45879I$ $b=-1.02104-1.23446I$	$-2.58040+6.55097I$	$-3.00232-8.95233I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.759420$ $a = -0.396801$ $b = -0.537831$	-1.01372	-11.2860
$u = -0.238482 + 1.223910I$ $a = 0.037299 - 0.531429I$ $b = 0.12489 - 1.74552I$	$-9.56824 - 4.63986I$	$-2.53665 + 1.77990I$
$u = -0.238482 - 1.223910I$ $a = 0.037299 + 0.531429I$ $b = 0.12489 + 1.74552I$	$-9.56824 + 4.63986I$	$-2.53665 - 1.77990I$
$u = 1.25828$ $a = -1.11711$ $b = 0.135805$	-0.844274	-6.82360
$u = 0.264664 + 0.670266I$ $a = -0.018243 - 0.736439I$ $b = 0.587531 + 0.857775I$	$-0.06550 + 2.02589I$	$0.03613 - 4.27604I$
$u = 0.264664 - 0.670266I$ $a = -0.018243 + 0.736439I$ $b = 0.587531 - 0.857775I$	$-0.06550 - 2.02589I$	$0.03613 + 4.27604I$
$u = -1.330090 + 0.222342I$ $a = -0.92490 + 1.09593I$ $b = 0.094519 + 1.136320I$	$-4.70867 + 0.81596I$	$-5.59655 - 0.54882I$
$u = -1.330090 - 0.222342I$ $a = -0.92490 - 1.09593I$ $b = 0.094519 - 1.136320I$	$-4.70867 - 0.81596I$	$-5.59655 + 0.54882I$
$u = 0.538622 + 0.352121I$ $a = 0.147046 + 1.001000I$ $b = 0.216583 - 0.106477I$	$0.98010 - 1.26540I$	$3.01329 + 5.29615I$
$u = 0.538622 - 0.352121I$ $a = 0.147046 - 1.001000I$ $b = 0.216583 + 0.106477I$	$0.98010 + 1.26540I$	$3.01329 - 5.29615I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.34887 + 0.69749I$ $a = 1.08996 - 1.58558I$ $b = -0.23003 - 1.81299I$	$-13.0253 + 11.4321I$	$-3.86498 - 4.79478I$
$u = -1.34887 - 0.69749I$ $a = 1.08996 + 1.58558I$ $b = -0.23003 + 1.81299I$	$-13.0253 - 11.4321I$	$-3.86498 + 4.79478I$
$u = 1.55966 + 0.42079I$ $a = -0.69697 - 1.79236I$ $b = 0.02142 - 1.78671I$	$-15.5246 - 1.3214I$	$-5.39704 + 0.62510I$
$u = 1.55966 - 0.42079I$ $a = -0.69697 + 1.79236I$ $b = 0.02142 + 1.78671I$	$-15.5246 + 1.3214I$	$-5.39704 - 0.62510I$

II.

$$\boldsymbol{I^u_2 = \langle -u^{14}+u^{13}+\cdots+b+u,\ -2u^{14}+u^{13}+\cdots+a-u,\ u^{15}-u^{14}+\cdots-3u^2+1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 2u^{14}-u^{13}+\cdots-u^2+u \\ u^{14}-u^{13}+\cdots+7u^3-u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^{14}-u^{13}+\cdots-u+3 \\ -u^{12}+3u^{10}-u^9-6u^8+2u^7+7u^6-3u^5-6u^4+2u^3+2u^2-u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{14}-u^{13}+\cdots-9u^2+3 \\ -u^{12}+3u^{10}-u^9-6u^8+2u^7+7u^6-3u^5-6u^4+2u^3+2u^2-u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{14}-2u^{13}+\cdots+2u+2 \\ -u^{13}+3u^{11}-u^{10}-7u^9+2u^8+9u^7-4u^6-9u^5+3u^4+4u^3-2u^2-u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{14}-u^{13}+\cdots+3u+2 \\ -u^{13}+3u^{11}-u^{10}-7u^9+2u^8+9u^7-4u^6-9u^5+3u^4+4u^3-2u^2-u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{14}+5u^{12}+\cdots+3u+4 \\ -u^{14}+3u^{12}-7u^{10}+10u^8-11u^6+7u^4-3u^2+u+2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 4u^{14}-11u^{12}+\cdots-u-1 \\ u^{14}-3u^{12}+\cdots+3u^3+2u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -u^{12}-u^{11}+3u^{10}+u^9-5u^8-4u^7+7u^6+4u^5-7u^4-3u^3+5u^2-2u-4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15} - 7u^{14} + \cdots + 6u - 1$
c_2	$u^{15} + u^{14} + \cdots + 3u^2 - 1$
c_3	$u^{15} - u^{14} + \cdots - 2u - 1$
c_4	$u^{15} + 8u^{13} + \cdots + 4u + 1$
c_5	$u^{15} - u^{14} + \cdots - 3u^2 + 1$
c_6	$u^{15} - u^{14} + \cdots + 3u + 1$
c_7	$u^{15} + 2u^{14} + \cdots + 4u + 1$
c_8	$u^{15} + 3u^{14} + \cdots - u + 1$
c_9	$u^{15} + 8u^{13} + \cdots + 4u - 1$
c_{10}	$u^{15} - 16u^{14} + \cdots + 4u + 1$
c_{11}	$u^{15} + u^{14} + \cdots + 3u - 1$
c_{12}	$u^{15} - 3u^{14} + \cdots - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{15} + 9y^{14} + \cdots - 14y - 1$
c_2, c_5	$y^{15} - 7y^{14} + \cdots + 6y - 1$
c_3	$y^{15} + 29y^{14} + \cdots - 14y - 1$
c_4, c_9	$y^{15} + 16y^{14} + \cdots + 4y - 1$
c_6, c_{11}	$y^{15} - 3y^{14} + \cdots + y - 1$
c_7	$y^{15} - 2y^{14} + \cdots + 18y - 1$
c_8, c_{12}	$y^{15} - y^{14} + \cdots + 3y - 1$
c_{10}	$y^{15} - 20y^{14} + \cdots + 252y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.899781 + 0.286994I$ $a = -0.44937 + 1.89015I$ $b = 0.304958 + 0.973459I$	$6.68911 - 1.23661I$	$-4.15485 - 0.98307I$
$u = 0.899781 - 0.286994I$ $a = -0.44937 - 1.89015I$ $b = 0.304958 - 0.973459I$	$6.68911 + 1.23661I$	$-4.15485 + 0.98307I$
$u = -0.893982$ $a = 0.674370$ $b = -0.525910$	0.237359	1.17550
$u = -0.896890 + 0.731944I$ $a = -0.254396 - 0.626802I$ $b = 0.153159 + 0.059677I$	$9.57728 + 2.79903I$	$7.57416 - 2.89020I$
$u = -0.896890 - 0.731944I$ $a = -0.254396 + 0.626802I$ $b = 0.153159 - 0.059677I$	$9.57728 - 2.79903I$	$7.57416 + 2.89020I$
$u = -1.107400 + 0.432221I$ $a = -1.13757 + 1.78331I$ $b = -0.01538 + 1.93584I$	$-4.12042 + 1.58492I$	$-8.26166 - 0.30703I$
$u = -1.107400 - 0.432221I$ $a = -1.13757 - 1.78331I$ $b = -0.01538 - 1.93584I$	$-4.12042 - 1.58492I$	$-8.26166 + 0.30703I$
$u = 0.550933 + 0.586599I$ $a = 0.901557 - 0.875340I$ $b = 0.45418 + 1.47368I$	$-1.53674 + 1.05029I$	$-3.10144 - 0.84326I$
$u = 0.550933 - 0.586599I$ $a = 0.901557 + 0.875340I$ $b = 0.45418 - 1.47368I$	$-1.53674 - 1.05029I$	$-3.10144 + 0.84326I$
$u = 1.096940 + 0.544029I$ $a = 1.21180 + 1.50559I$ $b = -0.72158 + 1.69669I$	$-3.32611 - 5.65603I$	$-6.88663 + 4.31157I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.096940 - 0.544029I$ $a = 1.21180 - 1.50559I$ $b = -0.72158 - 1.69669I$	$-3.32611 + 5.65603I$	$-6.88663 - 4.31157I$
$u = 0.914301 + 0.849307I$ $a = -0.569444 - 0.431437I$ $b = -0.039917 - 0.985105I$	$6.12893 - 3.15877I$	$-4.60445 + 3.34743I$
$u = 0.914301 - 0.849307I$ $a = -0.569444 + 0.431437I$ $b = -0.039917 + 0.985105I$	$6.12893 + 3.15877I$	$-4.60445 - 3.34743I$
$u = -0.510671 + 0.420907I$ $a = -1.53976 + 1.37826I$ $b = 0.12754 + 1.51005I$	$-2.01618 + 2.10877I$	$-1.65286 - 2.85205I$
$u = -0.510671 - 0.420907I$ $a = -1.53976 - 1.37826I$ $b = 0.12754 - 1.51005I$	$-2.01618 - 2.10877I$	$-1.65286 + 2.85205I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{15}-7u^{14}+\cdots+6u-1)(u^{24}+16u^{23}+\cdots+819u+121)$
c_2	$(u^{15}+u^{14}+\cdots+3u^2-1)(u^{24}+2u^{23}+\cdots-7u-11)$
c_3	$(u^{15}-u^{14}+\cdots-2u-1)(u^{24}+26u^{22}+\cdots+39u-11)$
c_4	$(u^{15}+8u^{13}+\cdots+4u+1)(u^{24}+u^{23}+\cdots+51u+43)$
c_5	$(u^{15}-u^{14}+\cdots-3u^2+1)(u^{24}+2u^{23}+\cdots-7u-11)$
c_6	$(u^{15}-u^{14}+\cdots+3u+1)(u^{24}-2u^{23}+\cdots-472u-163)$
c_7	$(u^{15}+2u^{14}+\cdots+4u+1)(u^{24}-3u^{23}+\cdots+9u+1)$
c_8	$(u^{15}+3u^{14}+\cdots-u+1)(u^{24}+4u^{23}+\cdots-138u-23)$
c_9	$(u^{15}+8u^{13}+\cdots+4u-1)(u^{24}+u^{23}+\cdots+51u+43)$
c_{10}	$(u^{15}-16u^{14}+\cdots+4u+1)(u^{24}-7u^{23}+\cdots-667u+1849)$
c_{11}	$(u^{15}+u^{14}+\cdots+3u-1)(u^{24}-2u^{23}+\cdots-472u-163)$
c_{12}	$(u^{15}-3u^{14}+\cdots-u-1)(u^{24}+4u^{23}+\cdots-138u-23)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{15}+9y^{14}+\cdots-14y-1)(y^{24}-8y^{23}+\cdots+75809y+14641)$
c_2, c_5	$(y^{15}-7y^{14}+\cdots+6y-1)(y^{24}-16y^{23}+\cdots-819y+121)$
c_3	$(y^{15}+29y^{14}+\cdots-14y-1)(y^{24}+52y^{23}+\cdots-1015y+121)$
c_4, c_9	$(y^{15}+16y^{14}+\cdots+4y-1)(y^{24}+7y^{23}+\cdots+667y+1849)$
c_6, c_{11}	$(y^{15}-3y^{14}+\cdots+y-1)(y^{24}+36y^{23}+\cdots-234846y+26569)$
c_7	$(y^{15}-2y^{14}+\cdots+18y-1)(y^{24}-47y^{23}+\cdots+113y+1)$
c_8, c_{12}	$(y^{15}-y^{14}+\cdots+3y-1)(y^{24}+34y^{23}+\cdots-65412y+529)$
c_{10}	$(y^{15}-20y^{14}+\cdots+252y-1)$ $\cdot(y^{24}+35y^{23}+\cdots-209766481y+3418801)$