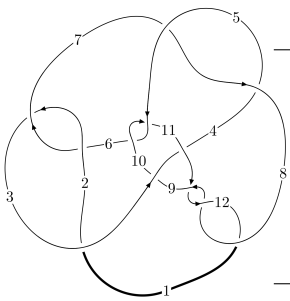
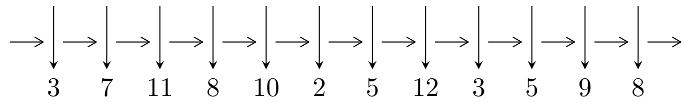
$12n_{0594}$ ($K12n_{0594}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -4u^{19} - 11u^{18} + \cdots + b - 6,\ -2u^{19} - 3u^{18} + \cdots + a - 7,\ u^{20} + 3u^{19} + \cdots + 3u + 1 \rangle$$

$$\begin{aligned} I_2^u = \langle &-2u^{13} + 8u^{12} + \cdots + b + 3, \\ &-u^{13} + 2u^{12} - 6u^{11} + 7u^{10} - 10u^9 + 8u^8 - 4u^7 + 4u^6 + 3u^5 + 2u^4 + 2u^3 - 2u^2 + a - 2, \\ &u^{14} - 4u^{13} + 13u^{12} - 28u^{11} + 50u^{10} - 72u^9 + 86u^8 - 89u^7 + 76u^6 - 59u^5 + 39u^4 - 23u^3 + 12u^2 - 4u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 34 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. $I_1^u = \langle -4u^{19}-11u^{18}+\cdots+b-6,\ -2u^{19}-3u^{18}+\cdots+a-7,\ u^{20}+3u^{19}+\cdots+3u+1\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}2u^{19}+3u^{18}+\cdots-u+7\\4u^{19}+11u^{18}+\cdots+5u+6\end{pmatrix}$$
$$a_4 = \begin{pmatrix}6u^{19}+14u^{18}+\cdots+4u+13\\4u^{19}+11u^{18}+\cdots+5u+6\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^{19}-u^{18}+\cdots-u+1\\-u^{19}-4u^{18}+\cdots-4u-2\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}3u^{19}+7u^{18}+\cdots+4u+12\\4u^{19}+10u^{18}+\cdots+2u+3\end{pmatrix}$$
$$a_2 = \begin{pmatrix}u^{19}+u^{18}+\cdots+2u+1\\u^{19}+4u^{18}+\cdots+4u+1\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-2u^{19}-2u^{18}+\cdots+3u-6\\-4u^{19}-12u^{18}+\cdots-5u-6\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^{18}+2u^{17}+\cdots+2u+1\\-u^{19}-3u^{18}+\cdots-2u-1\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 20u^{19}+55u^{18}+219u^{17}+423u^{16}+917u^{15}+1354u^{14}+1901u^{13}+2075u^{12}+1606u^{11}+752u^{10}-1039u^9-2337u^8-3525u^7-3656u^6-2870u^5-1973u^4-773u^3-277u^2+20u+23$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{20} + 10u^{19} + \cdots + 29696u + 4096$
c_2, c_6	$u^{20} - 16u^{19} + \cdots + 224u - 64$
c_3	$u^{20} + 2u^{19} + \cdots - 135u - 31$
c_4, c_7	$u^{20} - 4u^{19} + \cdots + u - 1$
c_5, c_9, c_{10}	$u^{20} - u^{19} + \cdots - 3u - 1$
c_8, c_{11}, c_{12}	$u^{20} - 3u^{19} + \cdots - 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{20} + 102y^{19} + \cdots - 1112539136y + 16777216$
c_2, c_6	$y^{20} - 10y^{19} + \cdots - 29696y + 4096$
c_3	$y^{20} + 44y^{19} + \cdots - 12831y + 961$
c_4, c_7	$y^{20} + 42y^{19} + \cdots - 29y + 1$
c_5, c_9, c_{10}	$y^{20} + 49y^{19} + \cdots + 9y + 1$
c_8, c_{11}, c_{12}	$y^{20} + 15y^{19} + \cdots - 21y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.042660 + 0.036790I$ $a = -0.041706 - 0.146779I$ $b = -1.09913 + 2.60338I$	$15.4500 + 5.4797I$	$-10.60978 - 2.00835I$
$u = -1.042660 - 0.036790I$ $a = -0.041706 + 0.146779I$ $b = -1.09913 - 2.60338I$	$15.4500 - 5.4797I$	$-10.60978 + 2.00835I$
$u = 1.08731$ $a = 0.282292$ $b = -0.147050$	-5.86045	-4.92500
$u = -0.176041 + 0.850242I$ $a = -0.272973 + 1.045810I$ $b = 0.746840 - 0.265541I$	$-0.414648 + 1.016570I$	$-12.17893 - 0.72142I$
$u = -0.176041 - 0.850242I$ $a = -0.272973 - 1.045810I$ $b = 0.746840 + 0.265541I$	$-0.414648 - 1.016570I$	$-12.17893 + 0.72142I$
$u = 0.222003 + 1.123880I$ $a = -0.155980 - 0.668566I$ $b = -0.185769 + 0.435768I$	$2.27216 - 2.01728I$	$-6.94050 + 3.50947I$
$u = 0.222003 - 1.123880I$ $a = -0.155980 + 0.668566I$ $b = -0.185769 - 0.435768I$	$2.27216 + 2.01728I$	$-6.94050 - 3.50947I$
$u = -0.153005 + 1.219290I$ $a = 0.53928 + 1.84965I$ $b = 0.69118 - 1.43719I$	$5.80153 + 4.79888I$	$-3.91055 - 4.91239I$
$u = -0.153005 - 1.219290I$ $a = 0.53928 - 1.84965I$ $b = 0.69118 + 1.43719I$	$5.80153 - 4.79888I$	$-3.91055 + 4.91239I$
$u = -0.112420 + 1.234960I$ $a = -0.73519 - 1.51536I$ $b = -0.356045 + 1.326390I$	$6.14605 - 0.99742I$	$-6.22294 + 0.30113I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.112420-1.234960I$ $a=-0.73519+1.51536I$ $b=-0.356045-1.326390I$	$6.14605+0.99742I$	$-6.22294-0.30113I$
$u=\ 0.538721+1.305800I$ $a=\ 0.121911+0.351718I$ $b=\ 0.036915-0.257923I$	$-1.83437-5.75000I$	$-9.64448-0.35618I$
$u=\ 0.538721-1.305800I$ $a=\ 0.121911-0.351718I$ $b=\ 0.036915+0.257923I$	$-1.83437+5.75000I$	$-9.64448+0.35618I$
$u=-0.54565+1.32924I$ $a=\ 2.33430+1.17622I$ $b=-1.00453-2.47780I$	$19.4483+0.1620I$	$-7.85194-0.70320I$
$u=-0.54565-1.32924I$ $a=\ 2.33430-1.17622I$ $b=-1.00453+2.47780I$	$19.4483-0.1620I$	$-7.85194+0.70320I$
$u=-0.50245+1.36268I$ $a=-0.91739-2.80304I$ $b=-1.11454+2.73435I$	$-19.6493+10.9702I$	$-7.71994-4.45500I$
$u=-0.50245-1.36268I$ $a=-0.91739+2.80304I$ $b=-1.11454-2.73435I$	$-19.6493-10.9702I$	$-7.71994+4.45500I$
$u=-0.401727+0.043777I$ $a=\ 0.05735+1.66973I$ $b=\ 0.241130+1.099340I$	$2.31319-2.74078I$	$-11.17617+6.82485I$
$u=-0.401727-0.043777I$ $a=\ 0.05735-1.66973I$ $b=\ 0.241130-1.099340I$	$2.31319+2.74078I$	$-11.17617-6.82485I$
$u=\ 0.259155$ $a=-1.14150$ $b=\ 0.234939$	-0.567617	-17.5650

II.

$\boldsymbol{I_2^u = \langle -2u^{13}+8u^{12}+\cdots+b+3,\ -u^{13}+2u^{12}+\cdots+a-2,\ u^{14}-4u^{13}+\cdots-4u+1\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{13} - 2u^{12} + \cdots + 2u^2 + 2 \\ 2u^{13} - 8u^{12} + \cdots + 11u - 3 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 3u^{13} - 10u^{12} + \cdots + 11u - 1 \\ 2u^{13} - 8u^{12} + \cdots + 11u - 3 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{13} - 2u^{12} + \cdots - 13u + 6 \\ u^{13} - 5u^{12} + \cdots + 11u - 2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 2u^{13} - 6u^{12} + \cdots - 15u^2 + 8u \\ 2u^{13} - 8u^{12} + \cdots + 9u - 2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{13} - 2u^{12} + \cdots - 11u + 6 \\ u^{13} - 5u^{12} + \cdots + 10u - 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 3u^{13} - 9u^{12} + \cdots + 8u - 1 \\ 2u^{13} - 10u^{12} + \cdots + 15u - 5 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2u^{13} - 9u^{12} + \cdots + 19u - 4 \\ -u^{13} + 4u^{12} + \cdots + 5u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= u^{13} - u^{12} + u^{11} + 5u^{10} - 14u^9 + 23u^8 - 33u^7 + 27u^6 - 30u^5 + 16u^4 - 18u^3 + 11u^2 - 4u - 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{14} - 10u^{13} + \cdots - 13u + 1$
c_2	$u^{14} + 2u^{13} + \cdots - u + 1$
c_3	$u^{14} - u^{13} + \cdots - 2u - 1$
c_4	$u^{14} - 3u^{13} + \cdots + 2u^2 - 1$
c_5, c_9	$u^{14} + 2u^{12} + 4u^{11} - u^{10} + 4u^9 + 5u^8 - 4u^7 + 4u^6 + 5u^5 - 3u^4 + 3u^2 - 1$
c_6	$u^{14} - 2u^{13} + \cdots + u + 1$
c_7	$u^{14} + 3u^{13} + \cdots + 2u^2 - 1$
c_8	$u^{14} - 4u^{13} + \cdots - 4u + 1$
c_{10}	$u^{14} + 2u^{12} - 4u^{11} - u^{10} - 4u^9 + 5u^8 + 4u^7 + 4u^6 - 5u^5 - 3u^4 + 3u^2 - 1$
c_{11}, c_{12}	$u^{14} + 4u^{13} + \cdots + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{14} - 2y^{13} + \cdots - 13y + 1$
c_2, c_6	$y^{14} - 10y^{13} + \cdots - 13y + 1$
c_3	$y^{14} + 3y^{13} + \cdots - 2y + 1$
c_4, c_7	$y^{14} + 5y^{13} + \cdots - 4y + 1$
c_5, c_9, c_{10}	$y^{14} + 4y^{13} + \cdots - 6y + 1$
c_8, c_{11}, c_{12}	$y^{14} + 10y^{13} + \cdots + 8y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.257957 + 1.025710I$ $a = -1.21422 + 1.52525I$ $b = -0.32410 - 1.59615I$	$4.34730 - 4.58698I$	$-8.81634 + 3.98143I$
$u = 0.257957 - 1.025710I$ $a = -1.21422 - 1.52525I$ $b = -0.32410 + 1.59615I$	$4.34730 + 4.58698I$	$-8.81634 - 3.98143I$
$u = 1.16118$ $a = -0.0729981$ $b = 0.525903$	-6.14347	-34.2700
$u = 0.813113$ $a = -0.251527$ $b = -1.09435$	-3.21147	-11.3390
$u = -0.388843 + 0.655973I$ $a = 1.45724 - 0.21090I$ $b = -0.540730 + 0.491931I$	$2.53558 + 1.80767I$	$-8.41467 - 3.02752I$
$u = -0.388843 - 0.655973I$ $a = 1.45724 + 0.21090I$ $b = -0.540730 - 0.491931I$	$2.53558 - 1.80767I$	$-8.41467 + 3.02752I$
$u = -0.082992 + 1.265620I$ $a = 0.16854 - 1.56029I$ $b = 0.608944 + 1.028170I$	$7.63621 + 2.52748I$	$-1.68376 - 3.30171I$
$u = -0.082992 - 1.265620I$ $a = 0.16854 + 1.56029I$ $b = 0.608944 - 1.028170I$	$7.63621 - 2.52748I$	$-1.68376 + 3.30171I$
$u = 0.382406 + 1.302770I$ $a = 0.432449 + 1.237680I$ $b = -1.079670 - 0.598913I$	$0.89066 - 4.29944I$	$-6.20629 + 3.86373I$
$u = 0.382406 - 1.302770I$ $a = 0.432449 - 1.237680I$ $b = -1.079670 + 0.598913I$	$0.89066 + 4.29944I$	$-6.20629 - 3.86373I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.60307 + 1.35028I$ $a = -0.114629 - 0.604014I$ $b = 0.503402 + 0.404837I$	$-2.00359 - 6.20208I$	$-16.6975 + 15.2700I$
$u = 0.60307 - 1.35028I$ $a = -0.114629 + 0.604014I$ $b = 0.503402 - 0.404837I$	$-2.00359 + 6.20208I$	$-16.6975 - 15.2700I$
$u = 0.241260 + 0.439152I$ $a = 1.93287 + 0.62822I$ $b = -0.383623 + 1.096450I$	$2.78585 + 2.08540I$	$-5.87726 + 0.45245I$
$u = 0.241260 - 0.439152I$ $a = 1.93287 - 0.62822I$ $b = -0.383623 - 1.096450I$	$2.78585 - 2.08540I$	$-5.87726 - 0.45245I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{14} - 10u^{13} + \cdots - 13u + 1)(u^{20} + 10u^{19} + \cdots + 29696u + 4096)$
c_2	$(u^{14} + 2u^{13} + \cdots - u + 1)(u^{20} - 16u^{19} + \cdots + 224u - 64)$
c_3	$(u^{14} - u^{13} + \cdots - 2u - 1)(u^{20} + 2u^{19} + \cdots - 135u - 31)$
c_4	$(u^{14} - 3u^{13} + \cdots + 2u^2 - 1)(u^{20} - 4u^{19} + \cdots + u - 1)$
c_5, c_9	$(u^{14} + 2u^{12} + 4u^{11} - u^{10} + 4u^9 + 5u^8 - 4u^7 + 4u^6 + 5u^5 - 3u^4 + 3u^2 - 1)$ $\cdot (u^{20} - u^{19} + \cdots - 3u - 1)$
c_6	$(u^{14} - 2u^{13} + \cdots + u + 1)(u^{20} - 16u^{19} + \cdots + 224u - 64)$
c_7	$(u^{14} + 3u^{13} + \cdots + 2u^2 - 1)(u^{20} - 4u^{19} + \cdots + u - 1)$
c_8	$(u^{14} - 4u^{13} + \cdots - 4u + 1)(u^{20} - 3u^{19} + \cdots - 3u + 1)$
c_{10}	$(u^{14} + 2u^{12} - 4u^{11} - u^{10} - 4u^9 + 5u^8 + 4u^7 + 4u^6 - 5u^5 - 3u^4 + 3u^2 - 1)$ $\cdot (u^{20} - u^{19} + \cdots - 3u - 1)$
c_{11}, c_{12}	$(u^{14} + 4u^{13} + \cdots + 4u + 1)(u^{20} - 3u^{19} + \cdots - 3u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{14} - 2y^{13} + \cdots - 13y + 1)$ $\cdot (y^{20} + 102y^{19} + \cdots - 1112539136y + 16777216)$
c_2, c_6	$(y^{14} - 10y^{13} + \cdots - 13y + 1)(y^{20} - 10y^{19} + \cdots - 29696y + 4096)$
c_3	$(y^{14} + 3y^{13} + \cdots - 2y + 1)(y^{20} + 44y^{19} + \cdots - 12831y + 961)$
c_4, c_7	$(y^{14} + 5y^{13} + \cdots - 4y + 1)(y^{20} + 42y^{19} + \cdots - 29y + 1)$
c_5, c_9, c_{10}	$(y^{14} + 4y^{13} + \cdots - 6y + 1)(y^{20} + 49y^{19} + \cdots + 9y + 1)$
c_8, c_{11}, c_{12}	$(y^{14} + 10y^{13} + \cdots + 8y + 1)(y^{20} + 15y^{19} + \cdots - 21y + 1)$