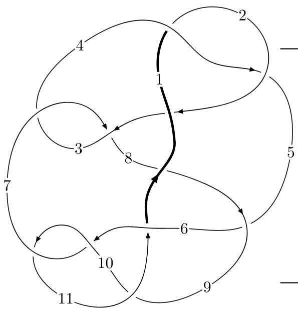
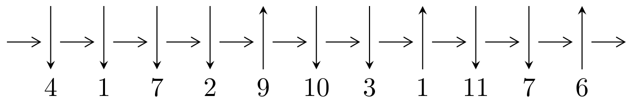
$11n_{54}$ $(K11n_{54})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{25} + u^{24} + \cdots + b - u,\ -u^{25} + u^{24} + \cdots + a + 2,\ u^{27} - 2u^{26} + \cdots + 4u - 1 \rangle$$
$$I_2^u = \langle -u^3 + b + u + 1,\ -u^4 - u^3 + u^2 + a + u,\ u^6 + u^5 - u^4 - 2u^3 + u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 33 representations.

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[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.

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$\boldsymbol{I_1^u = \langle -u^{25}+u^{24}+\cdots+b-u,\ -u^{25}+u^{24}+\cdots+a+2,\ u^{27}-2u^{26}+\cdots+4u-1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}u^{25}-u^{24}+\cdots+3u^2-2\\u^{25}-u^{24}+\cdots+u^2+u\end{pmatrix}$$

$$a_7 = \begin{pmatrix}1\\u^2\end{pmatrix}$$

$$a_4 = \begin{pmatrix}u^{26}-u^{25}+\cdots-5u-1\\-u^{26}+u^{25}+\cdots-2u^2+2u\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-u^3\\-u^3+u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-u^{24}+u^{23}+\cdots-3u-1\\-u^{26}+u^{25}+\cdots-5u^3+2u\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-u^8+u^6-u^4-1\\-u^{10}+2u^8-3u^6+2u^4-u^2\end{pmatrix}$$

$$a_9 = \begin{pmatrix}u^3\\u^5-u^3+u\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-u^{11}+2u^9-2u^7+u^3\\-u^{11}+3u^9-4u^7+3u^5-u^3+u\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-u^{11}+2u^9-2u^7+u^3\\-u^{11}+3u^9-4u^7+3u^5-u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{26}+6u^{25}+20u^{24}-39u^{23}-47u^{22}+126u^{21}+51u^{20}-259u^{19}+17u^{18}+366u^{17}-150u^{16}-376u^{15}+266u^{14}+292u^{13}-287u^{12}-189u^{11}+231u^{10}+112u^9-162u^8-61u^7+97u^6+36u^5-47u^4-23u^3+17u^2+12u-14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{27} - 7u^{26} + \cdots - 5u + 1$
c_2	$u^{27} + 3u^{26} + \cdots + 5u + 1$
c_3, c_7	$u^{27} + u^{26} + \cdots + 128u + 64$
c_5	$u^{27} - 2u^{26} + \cdots + 2u + 1$
c_6, c_{10}	$u^{27} + 2u^{26} + \cdots + 4u + 1$
c_8	$u^{27} + 8u^{26} + \cdots + 16990u + 565$
c_9	$u^{27} + 12u^{26} + \cdots + 12u + 1$
c_{11}	$u^{27} + 6u^{26} + \cdots + 48u + 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{27} - 3y^{26} + \cdots + 5y - 1$
c_2	$y^{27} + 49y^{26} + \cdots - 23y - 1$
c_3, c_7	$y^{27} + 39y^{26} + \cdots - 28672y - 4096$
c_5	$y^{27} - 36y^{26} + \cdots + 12y - 1$
c_6, c_{10}	$y^{27} - 12y^{26} + \cdots + 12y - 1$
c_8	$y^{27} - 72y^{26} + \cdots + 171458760y - 319225$
c_9	$y^{27} + 8y^{26} + \cdots + 32y - 1$
c_{11}	$y^{27} - 4y^{26} + \cdots + 504y - 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.917142 + 0.407659I$ $a = 1.20846 + 2.04717I$ $b = 2.09938 + 1.19019I$	$-2.84916 + 1.60658I$	$-4.88146 - 5.04321I$
$u = -0.917142 - 0.407659I$ $a = 1.20846 - 2.04717I$ $b = 2.09938 - 1.19019I$	$-2.84916 - 1.60658I$	$-4.88146 + 5.04321I$
$u = 0.526875 + 0.831344I$ $a = 0.11316 - 2.41248I$ $b = 1.82470 - 0.93091I$	$12.17430 - 2.19817I$	$-0.63423 + 2.08830I$
$u = 0.526875 - 0.831344I$ $a = 0.11316 + 2.41248I$ $b = 1.82470 + 0.93091I$	$12.17430 + 2.19817I$	$-0.63423 - 2.08830I$
$u = 0.467388 + 0.843376I$ $a = -0.08288 + 2.25887I$ $b = -2.19783 + 0.76965I$	$11.82210 + 5.91141I$	$-1.03607 - 2.33228I$
$u = 0.467388 - 0.843376I$ $a = -0.08288 - 2.25887I$ $b = -2.19783 - 0.76965I$	$11.82210 - 5.91141I$	$-1.03607 + 2.33228I$
$u = 0.971756 + 0.498250I$ $a = 0.462169 - 0.060454I$ $b = -0.404355 + 0.874051I$	$-2.13464 - 3.70052I$	$-7.14700 + 4.32876I$
$u = 0.971756 - 0.498250I$ $a = 0.462169 + 0.060454I$ $b = -0.404355 - 0.874051I$	$-2.13464 + 3.70052I$	$-7.14700 - 4.32876I$
$u = 1.059940 + 0.286714I$ $a = -0.219785 - 0.584186I$ $b = 0.225820 - 0.093826I$	$-2.30226 - 0.55935I$	$-5.41913 - 0.15707I$
$u = 1.059940 - 0.286714I$ $a = -0.219785 + 0.584186I$ $b = 0.225820 + 0.093826I$	$-2.30226 + 0.55935I$	$-5.41913 + 0.15707I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.580852+0.656113I$ $a=-0.834314-0.778452I$ $b=-1.197700-0.124667I$	$2.76848+0.13713I$	$0.773547-0.780119I$
$u=-0.580852-0.656113I$ $a=-0.834314+0.778452I$ $b=-1.197700+0.124667I$	$2.76848-0.13713I$	$0.773547+0.780119I$
$u=-1.001280+0.594918I$ $a=-0.59412-1.46994I$ $b=-1.21967-0.98587I$	$1.53114+4.74698I$	$-2.05877-5.37624I$
$u=-1.001280-0.594918I$ $a=-0.59412+1.46994I$ $b=-1.21967+0.98587I$	$1.53114-4.74698I$	$-2.05877+5.37624I$
$u=-1.175710+0.039463I$ $a=-0.392154-0.491529I$ $b=-0.267337+1.188470I$	$5.98407-3.79755I$	$-6.46791+2.18250I$
$u=-1.175710-0.039463I$ $a=-0.392154+0.491529I$ $b=-0.267337-1.188470I$	$5.98407+3.79755I$	$-6.46791-2.18250I$
$u=-1.103060+0.538696I$ $a=1.181940-0.254407I$ $b=0.857869-0.770675I$	$-0.58075+6.65503I$	$-3.43691-7.46005I$
$u=-1.103060-0.538696I$ $a=1.181940+0.254407I$ $b=0.857869+0.770675I$	$-0.58075-6.65503I$	$-3.43691+7.46005I$
$u=-0.326760+0.690469I$ $a=-0.462660+0.572854I$ $b=0.218748+0.864330I$	$1.66847-1.93992I$	$0.12713+2.72762I$
$u=-0.326760-0.690469I$ $a=-0.462660-0.572854I$ $b=0.218748-0.864330I$	$1.66847+1.93992I$	$0.12713-2.72762I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.698871 + 0.307602I$ $a = -0.894710 + 0.463414I$ $b = 0.205039 - 0.148466I$	$-1.077410 - 0.093546I$	$-6.21440 - 0.06252I$
$u = 0.698871 - 0.307602I$ $a = -0.894710 - 0.463414I$ $b = 0.205039 + 0.148466I$	$-1.077410 + 0.093546I$	$-6.21440 + 0.06252I$
$u = 1.074550 + 0.661713I$ $a = 2.00442 - 1.14909I$ $b = 3.21245 - 0.01349I$	$10.52730 - 3.36992I$	$-2.71394 + 2.50695I$
$u = 1.074550 - 0.661713I$ $a = 2.00442 + 1.14909I$ $b = 3.21245 + 0.01349I$	$10.52730 + 3.36992I$	$-2.71394 - 2.50695I$
$u = 1.106510 + 0.642553I$ $a = -2.19489 + 1.59992I$ $b = -3.52700 + 0.08432I$	$9.8976 - 11.4401I$	$-3.60368 + 6.65783I$
$u = 1.106510 - 0.642553I$ $a = -2.19489 - 1.59992I$ $b = -3.52700 - 0.08432I$	$9.8976 + 11.4401I$	$-3.60368 - 6.65783I$
$u = 0.397840$ $a = -1.58927$ $b = 0.339752$	-1.09734	-8.57440

II. $\boldsymbol{I_2^u = \langle -u^3 + b + u + 1,\ -u^4 - u^3 + u^2 + a + u,\ u^6 + u^5 - u^4 - 2u^3 + u + 1 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^4 + u^3 - u^2 - u \\ u^3 - u - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^4 + u^3 - u^2 - u \\ u^3 - u - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^4 - u^2 - u \\ -1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^4 - 5u^2 - 5u - 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^6$
c_2, c_4	$(u+1)^6$
c_3, c_7	u^6
c_5, c_8, c_{10}	$u^6 - u^5 - u^4 + 2u^3 - u + 1$
c_6	$u^6 + u^5 - u^4 - 2u^3 + u + 1$
c_9, c_{11}	$u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1$

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = -0.685196 + 1.063260I$ $b = -1.258210 + 0.569162I$	$-3.53554 - 0.92430I$	$-12.63596 - 0.09369I$
$u = 1.002190 - 0.295542I$ $a = -0.685196 - 1.063260I$ $b = -1.258210 - 0.569162I$	$-3.53554 + 0.92430I$	$-12.63596 + 0.09369I$
$u = -0.428243 + 0.664531I$ $a = 0.917982 + 0.270708I$ $b = -0.082955 - 0.592379I$	$0.245672 - 0.924305I$	$-2.59683 + 0.69886I$
$u = -0.428243 - 0.664531I$ $a = 0.917982 - 0.270708I$ $b = -0.082955 + 0.592379I$	$0.245672 + 0.924305I$	$-2.59683 - 0.69886I$
$u = -1.073950 + 0.558752I$ $a = -0.732786 + 0.381252I$ $b = -0.158836 + 1.200140I$	$-1.64493 + 5.69302I$	$-6.76721 - 4.86918I$
$u = -1.073950 - 0.558752I$ $a = -0.732786 - 0.381252I$ $b = -0.158836 - 1.200140I$	$-1.64493 - 5.69302I$	$-6.76721 + 4.86918I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^{27}-7u^{26}+\cdots-5u+1)$
c_2	$((u+1)^6)(u^{27}+3u^{26}+\cdots+5u+1)$
c_3, c_7	$u^6(u^{27}+u^{26}+\cdots+128u+64)$
c_4	$((u+1)^6)(u^{27}-7u^{26}+\cdots-5u+1)$
c_5	$(u^6-u^5-u^4+2u^3-u+1)(u^{27}-2u^{26}+\cdots+2u+1)$
c_6	$(u^6+u^5-u^4-2u^3+u+1)(u^{27}+2u^{26}+\cdots+4u+1)$
c_8	$(u^6-u^5-u^4+2u^3-u+1)(u^{27}+8u^{26}+\cdots+16990u+565)$
c_9	$(u^6-3u^5+5u^4-4u^3+2u^2-u+1)(u^{27}+12u^{26}+\cdots+12u+1)$
c_{10}	$(u^6-u^5-u^4+2u^3-u+1)(u^{27}+2u^{26}+\cdots+4u+1)$
c_{11}	$(u^6-3u^5+5u^4-4u^3+2u^2-u+1)(u^{27}+6u^{26}+\cdots+48u+5)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^6)(y^{27} - 3y^{26} + \cdots + 5y - 1)$
c_2	$((y-1)^6)(y^{27} + 49y^{26} + \cdots - 23y - 1)$
c_3, c_7	$y^6(y^{27} + 39y^{26} + \cdots - 28672y - 4096)$
c_5	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{27} - 36y^{26} + \cdots + 12y - 1)$
c_6, c_{10}	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{27} - 12y^{26} + \cdots + 12y - 1)$
c_8	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)$ $\cdot (y^{27} - 72y^{26} + \cdots + 171458760y - 319225)$
c_9	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)(y^{27} + 8y^{26} + \cdots + 32y - 1)$
c_{11}	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)(y^{27} - 4y^{26} + \cdots + 504y - 25)$