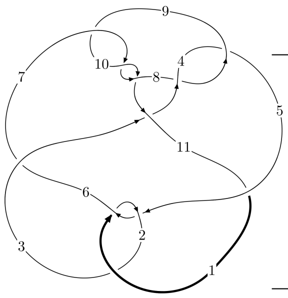
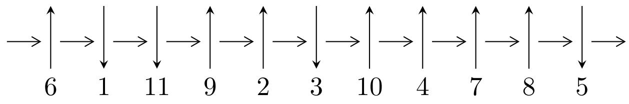
$11a_{92}$ ($K11a_{92}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{55} - 2u^{54} + \cdots + b + 1,\ -u^{54} + u^{53} + \cdots + a + 3,\ u^{56} - 2u^{55} + \cdots + 5u - 1\rangle$$
$$I_2^u = \langle b,\ -u^2 + a - u - 1,\ u^5 + u^4 + 2u^3 + u^2 + u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 61 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.

$$\boldsymbol{I^u_1 = \langle u^{55}-2u^{54}+\cdots+b+1,\ -u^{54}+u^{53}+\cdots+a+3,\ u^{56}-2u^{55}+\cdots+5u-1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-u^3\\u^5+u^3+u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^6-u^4+1\\u^8+2u^6+2u^4\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u^{54}-u^{53}+\cdots+6u-3\\-u^{55}+2u^{54}+\cdots+6u-1\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^{11}-2u^9-2u^7-u^3\\-u^{11}-3u^9-4u^7-u^5+u^3+u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-u^{54}+u^{53}+\cdots+u-2\\u^{55}-2u^{54}+\cdots-3u+1\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u^3\\u^3+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u^{51}+u^{50}+\cdots+4u-2\\u^{30}+8u^{28}+\cdots-u^2+2u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u^{51}+u^{50}+\cdots+4u-2\\u^{30}+8u^{28}+\cdots-u^2+2u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{55}-11u^{54}+\cdots-30u+15$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{56} - 2u^{55} + \cdots + 5u - 1$
c_2	$u^{56} + 30u^{55} + \cdots - 5u + 1$
c_3	$u^{56} - 6u^{55} + \cdots + 2207u + 61$
c_4, c_8	$u^{56} + u^{55} + \cdots - 72u^2 + 32$
c_6, c_{11}	$u^{56} + 2u^{55} + \cdots - 117u - 17$
c_7, c_9, c_{10}	$u^{56} + 6u^{55} + \cdots - 5u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{56} + 30y^{55} + \cdots - 5y + 1$
c_2	$y^{56} - 6y^{55} + \cdots - 93y + 1$
c_3	$y^{56} + 18y^{55} + \cdots - 3978053y + 3721$
c_4, c_8	$y^{56} - 33y^{55} + \cdots - 4608y + 1024$
c_6, c_{11}	$y^{56} - 42y^{55} + \cdots - 3965y + 289$
c_7, c_9, c_{10}	$y^{56} - 54y^{55} + \cdots - 15y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.541939+0.811305I$ $a=\ \ 1.42851+1.45771I$ $b=-1.123670+0.266261I$	$2.81877-4.58854I$	$7.32192+7.37069I$
$u=-0.541939-0.811305I$ $a=\ \ 1.42851-1.45771I$ $b=-1.123670-0.266261I$	$2.81877+4.58854I$	$7.32192-7.37069I$
$u=-0.593449+0.851697I$ $a=-1.01997-1.80907I$ $b=\ \ 1.38769-0.52689I$	$9.36273-8.19631I$	$9.19540+7.01031I$
$u=-0.593449-0.851697I$ $a=-1.01997+1.80907I$ $b=\ \ 1.38769+0.52689I$	$9.36273+8.19631I$	$9.19540-7.01031I$
$u=\ \ 0.546314+0.769644I$ $a=\ \ 0.992511-0.378537I$ $b=\ \ 0.058951-1.153390I$	$5.03153+2.19878I$	$8.69192-3.70981I$
$u=\ \ 0.546314-0.769644I$ $a=\ \ 0.992511+0.378537I$ $b=\ \ 0.058951+1.153390I$	$5.03153-2.19878I$	$8.69192+3.70981I$
$u=\ \ 0.128995+0.928935I$ $a=-0.49469-1.36046I$ $b=-0.698724-0.392096I$	$-1.44134+1.72632I$	$-2.72624-5.24259I$
$u=\ \ 0.128995-0.928935I$ $a=-0.49469+1.36046I$ $b=-0.698724+0.392096I$	$-1.44134-1.72632I$	$-2.72624+5.24259I$
$u=-0.618401+0.677884I$ $a=\ \ 0.634942+0.465765I$ $b=-1.39776-0.45849I$	$9.85976+3.46157I$	$10.53207-0.66652I$
$u=-0.618401-0.677884I$ $a=\ \ 0.634942-0.465765I$ $b=-1.39776+0.45849I$	$9.85976-3.46157I$	$10.53207+0.66652I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.536957+0.721498I$ $a=-1.33171-0.63904I$ $b=\ \ 1.094330+0.157058I$	$3.07741+0.22694I$	$8.69395-0.01547I$
$u=-0.536957-0.721498I$ $a=-1.33171+0.63904I$ $b=\ \ 1.094330-0.157058I$	$3.07741-0.22694I$	$8.69395+0.01547I$
$u=\ \ 0.393541+0.806213I$ $a=-0.534427+0.136082I$ $b=-0.100768+0.460978I$	$-0.09593+1.71111I$	$-0.21296-4.36138I$
$u=\ \ 0.393541-0.806213I$ $a=-0.534427-0.136082I$ $b=-0.100768-0.460978I$	$-0.09593-1.71111I$	$-0.21296+4.36138I$
$u=\ \ 0.165097+1.107340I$ $a=\ \ 1.56163+1.18520I$ $b=\ \ 1.222870+0.358512I$	$3.95584+4.04331I$	$3.44250-3.73640I$
$u=\ \ 0.165097-1.107340I$ $a=\ \ 1.56163-1.18520I$ $b=\ \ 1.222870-0.358512I$	$3.95584-4.04331I$	$3.44250+3.73640I$
$u=\ \ 0.819442+0.178280I$ $a=-0.357670-1.253280I$ $b=\ \ 1.31600-0.63627I$	$5.92889-9.27747I$	$7.55643+5.32356I$
$u=\ \ 0.819442-0.178280I$ $a=-0.357670+1.253280I$ $b=\ \ 1.31600+0.63627I$	$5.92889+9.27747I$	$7.55643-5.32356I$
$u=-0.837877$ $a=\ \ 0.756831$ $b=\ \ 0.948658$	0.628307	8.59010
$u=\ \ 0.775248+0.160784I$ $a=\ \ 0.738440+1.157850I$ $b=-1.121220+0.448045I$	$-0.03936-5.21507I$	$4.57400+5.37582I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.775248 - 0.160784I$ $a = 0.738440 - 1.157850I$ $b = -1.121220 - 0.448045I$	$-0.03936 + 5.21507I$	$4.57400 - 5.37582I$
$u = 0.527916 + 1.093820I$ $a = 0.85567 + 1.31151I$ $b = 1.41225 - 0.21941I$	$6.18656 + 2.95129I$	0
$u = 0.527916 - 1.093820I$ $a = 0.85567 - 1.31151I$ $b = 1.41225 + 0.21941I$	$6.18656 - 2.95129I$	0
$u = 0.406423 + 1.148900I$ $a = -0.206924 + 0.240072I$ $b = -0.945829 + 0.294251I$	$-2.27409 + 3.17603I$	0
$u = 0.406423 - 1.148900I$ $a = -0.206924 - 0.240072I$ $b = -0.945829 - 0.294251I$	$-2.27409 - 3.17603I$	0
$u = -0.373696 + 1.162320I$ $a = 0.11056 + 2.44091I$ $b = -0.376968 + 1.039610I$	$-1.226340 - 0.673936I$	0
$u = -0.373696 - 1.162320I$ $a = 0.11056 - 2.44091I$ $b = -0.376968 - 1.039610I$	$-1.226340 + 0.673936I$	0
$u = 0.696924 + 0.334113I$ $a = 0.495506 + 0.067097I$ $b = -1.378520 - 0.306067I$	$8.39220 + 1.73145I$	$10.27072 - 1.13053I$
$u = 0.696924 - 0.334113I$ $a = 0.495506 - 0.067097I$ $b = -1.378520 + 0.306067I$	$8.39220 - 1.73145I$	$10.27072 + 1.13053I$
$u = -0.741697 + 0.174610I$ $a = 0.470285 - 0.832398I$ $b = 0.280634 - 1.119790I$	$2.61340 + 2.94506I$	$6.64873 - 2.47914I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.741697 - 0.174610I$ $a = 0.470285 + 0.832398I$ $b = 0.280634 + 1.119790I$	$2.61340 - 2.94506I$	$6.64873 + 2.47914I$
$u = -0.126536 + 0.746458I$ $a = -0.84177 + 2.11295I$ $b = 0.411324 + 0.477215I$	$1.064190 - 0.808693I$	$2.55500 - 2.42625I$
$u = -0.126536 - 0.746458I$ $a = -0.84177 - 2.11295I$ $b = 0.411324 - 0.477215I$	$1.064190 + 0.808693I$	$2.55500 + 2.42625I$
$u = 0.369831 + 1.188440I$ $a = 0.956977 - 0.911104I$ $b = 1.068040 - 0.502274I$	$-4.02517 - 1.42731I$	0
$u = 0.369831 - 1.188440I$ $a = 0.956977 + 0.911104I$ $b = 1.068040 + 0.502274I$	$-4.02517 + 1.42731I$	0
$u = -0.749356 + 0.064381I$ $a = -0.349458 + 0.536326I$ $b = -0.335252 + 0.643104I$	$-2.43135 + 0.93671I$	$-0.980703 - 0.861698I$
$u = -0.749356 - 0.064381I$ $a = -0.349458 - 0.536326I$ $b = -0.335252 - 0.643104I$	$-2.43135 - 0.93671I$	$-0.980703 + 0.861698I$
$u = 0.495429 + 1.155840I$ $a = 0.25566 - 1.70729I$ $b = -1.092030 - 0.173225I$	$-1.62056 + 4.94124I$	0
$u = 0.495429 - 1.155840I$ $a = 0.25566 + 1.70729I$ $b = -1.092030 + 0.173225I$	$-1.62056 - 4.94124I$	0
$u = -0.424253 + 1.189480I$ $a = 0.12864 - 1.60526I$ $b = 0.405838 - 0.694649I$	$-6.03353 - 3.18510I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.424253 - 1.189480I$ $a = 0.12864 + 1.60526I$ $b = 0.405838 + 0.694649I$	$-6.03353 + 3.18510I$	0
$u = 0.347664 + 1.216700I$ $a = -1.59497 + 1.08012I$ $b = -1.263120 + 0.629980I$	$1.65628 - 5.42117I$	0
$u = 0.347664 - 1.216700I$ $a = -1.59497 - 1.08012I$ $b = -1.263120 - 0.629980I$	$1.65628 + 5.42117I$	0
$u = -0.509728 + 1.166280I$ $a = -1.69077 - 1.44666I$ $b = -0.328834 - 1.173990I$	$-0.26647 - 7.63409I$	0
$u = -0.509728 - 1.166280I$ $a = -1.69077 + 1.44666I$ $b = -0.328834 + 1.173990I$	$-0.26647 + 7.63409I$	0
$u = -0.476321 + 1.185870I$ $a = 1.13864 + 0.86802I$ $b = 0.294208 + 0.702336I$	$-5.66376 - 5.43442I$	0
$u = -0.476321 - 1.185870I$ $a = 1.13864 - 0.86802I$ $b = 0.294208 - 0.702336I$	$-5.66376 + 5.43442I$	0
$u = 0.513303 + 1.179050I$ $a = -0.19445 + 2.45753I$ $b = 1.158800 + 0.479620I$	$-3.01871 + 9.99320I$	0
$u = 0.513303 - 1.179050I$ $a = -0.19445 - 2.45753I$ $b = 1.158800 - 0.479620I$	$-3.01871 - 9.99320I$	0
$u = 0.680569 + 0.163703I$ $a = -1.128560 - 0.586189I$ $b = 0.997782 - 0.105266I$	$1.216130 - 0.445746I$	$7.76853 + 0.07614I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.680569 - 0.163703I$ $a = -1.128560 + 0.586189I$ $b = 0.997782 + 0.105266I$	$1.216130 + 0.445746I$	$7.76853 - 0.07614I$
$u = 0.529749 + 1.189840I$ $a = -0.08999 - 2.82061I$ $b = -1.31987 - 0.67018I$	$2.9322 + 14.2422I$	0
$u = 0.529749 - 1.189840I$ $a = -0.08999 + 2.82061I$ $b = -1.31987 + 0.67018I$	$2.9322 - 14.2422I$	0
$u = -0.455869 + 1.229250I$ $a = -1.46012 + 0.80106I$ $b = -0.906346 + 0.052067I$	$-3.05418 - 4.60578I$	0
$u = -0.455869 - 1.229250I$ $a = -1.46012 - 0.80106I$ $b = -0.906346 - 0.052067I$	$-3.05418 + 4.60578I$	0
$u = 0.341383$ $a = -1.70182$ $b = 0.611698$	1.00387	10.1330

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

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

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

$$a_7 = \begin{pmatrix} -u^3 \\ -u^3 - u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 + u + 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + u + 1 \\ 0 \end{pmatrix}$$

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^4 - 7u^3 - 8u^2 - 6u$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.339110 + 0.822375I$ $a = 0.77780 + 1.38013I$ $b = 0$	$1.31583 + 1.53058I$	$6.99101 - 6.23673I$
$u = 0.339110 - 0.822375I$ $a = 0.77780 - 1.38013I$ $b = 0$	$1.31583 - 1.53058I$	$6.99101 + 6.23673I$
$u = -0.766826$ $a = 0.821196$ $b = 0$	-0.756147	2.36160
$u = -0.455697 + 1.200150I$ $a = -0.688402 + 0.106340I$ $b = 0$	$-4.22763 - 4.40083I$	$-1.17182 + 3.02310I$
$u = -0.455697 - 1.200150I$ $a = -0.688402 - 0.106340I$ $b = 0$	$-4.22763 + 4.40083I$	$-1.17182 - 3.02310I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^5 - u^4 + 2u^3 - u^2 + u - 1)(u^{56} - 2u^{55} + \cdots + 5u - 1)$
c_2	$(u^5 + 3u^4 + 4u^3 + u^2 - u - 1)(u^{56} + 30u^{55} + \cdots - 5u + 1)$
c_3	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)(u^{56} - 6u^{55} + \cdots + 2207u + 61)$
c_4, c_8	$u^5(u^{56} + u^{55} + \cdots - 72u^2 + 32)$
c_5	$(u^5 + u^4 + 2u^3 + u^2 + u + 1)(u^{56} - 2u^{55} + \cdots + 5u - 1)$
c_6	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)(u^{56} + 2u^{55} + \cdots - 117u - 17)$
c_7	$((u + 1)^5)(u^{56} + 6u^{55} + \cdots - 5u - 1)$
c_9, c_{10}	$((u - 1)^5)(u^{56} + 6u^{55} + \cdots - 5u - 1)$
c_{11}	$(u^5 + u^4 - 2u^3 - u^2 + u - 1)(u^{56} + 2u^{55} + \cdots - 117u - 17)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^5+3y^4+4y^3+y^2-y-1)(y^{56}+30y^{55}+\cdots-5y+1)$
c_2	$(y^5-y^4+8y^3-3y^2+3y-1)(y^{56}-6y^{55}+\cdots-93y+1)$
c_3	$(y^5-5y^4+8y^3-3y^2-y-1)(y^{56}+18y^{55}+\cdots-3978053y+3721)$
c_4, c_8	$y^5(y^{56}-33y^{55}+\cdots-4608y+1024)$
c_6, c_{11}	$(y^5-5y^4+8y^3-3y^2-y-1)(y^{56}-42y^{55}+\cdots-3965y+289)$
c_7, c_9, c_{10}	$((y-1)^5)(y^{56}-54y^{55}+\cdots-15y+1)$