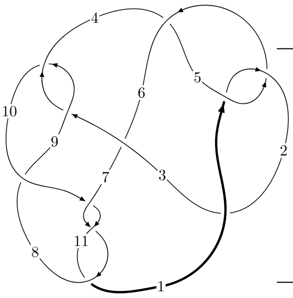
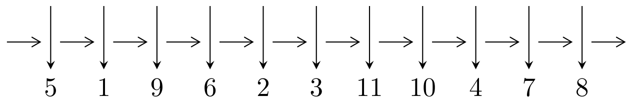
$11a_{94}$ ($K11a_{94}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -17u^{55} + 43u^{54} + \cdots + 2b - 11,\ -3u^{55} + 7u^{54} + \cdots + 4a + 3,\ u^{56} - 4u^{55} + \cdots - 2u - 1 \rangle$$
$$I_2^u = \langle b,\ a^3 + a^2 + 2a + 1,\ u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 59 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. $\boldsymbol{I_1^u = \langle -17u^{55} + 43u^{54} + \cdots + 2b - 11,\ -3u^{55} + 7u^{54} + \cdots + 4a + 3,\ u^{56} - 4u^{55} + \cdots - 2u - 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{3}{4}u^{55} - \frac{7}{4}u^{54} + \cdots + \frac{13}{4}u - \frac{3}{4} \\ \frac{17}{2}u^{55} - \frac{43}{2}u^{54} + \cdots + \frac{31}{2}u + \frac{11}{2} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} \frac{33}{4}u^{55} - \frac{85}{4}u^{54} + \cdots + \frac{71}{4}u + \frac{19}{4} \\ \frac{5}{2}u^{55} - \frac{17}{2}u^{54} + \cdots + \frac{17}{2}u + \frac{5}{2} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{27}{4}u^{55} - \frac{71}{4}u^{54} + \cdots + \frac{57}{4}u + \frac{13}{4} \\ \frac{27}{4}u^{55} - \frac{75}{4}u^{54} + \cdots + \frac{61}{4}u + \frac{21}{4} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{1}{4}u^{55} - \frac{3}{4}u^{54} + \cdots - \frac{13}{4}u - \frac{3}{4} \\ -u^{10} + 4u^8 + 2u^7 - 5u^6 - 6u^5 + 4u^3 + 3u^2 + 2u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 4u^{55} - \frac{23}{2}u^{54} + \cdots + 5u + \frac{3}{2} \\ -\frac{9}{4}u^{55} + \frac{25}{4}u^{54} + \cdots - \frac{7}{4}u - \frac{7}{4} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 4u^{55} - \frac{23}{2}u^{54} + \cdots + 5u + \frac{3}{2} \\ -\frac{9}{4}u^{55} + \frac{25}{4}u^{54} + \cdots - \frac{7}{4}u - \frac{7}{4} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^{55} + \frac{15}{2}u^{54} + \cdots + 5u - \frac{29}{2}$

(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, c_4	$u^{56} + 18u^{55} + \cdots + 5u + 1$
c_3, c_9	$u^{56} - u^{55} + \cdots + 12u + 8$
c_6	$u^{56} - 2u^{55} + \cdots - 145u - 25$
c_7, c_{10}, c_{11}	$u^{56} - 4u^{55} + \cdots - 2u - 1$
c_8	$u^{56} + 21u^{55} + \cdots + 592u + 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{56} - 18y^{55} + \cdots - 5y + 1$
c_2, c_4	$y^{56} + 42y^{55} + \cdots - 77y + 1$
c_3, c_9	$y^{56} - 21y^{55} + \cdots - 592y + 64$
c_6	$y^{56} + 6y^{55} + \cdots + 7275y + 625$
c_7, c_{10}, c_{11}	$y^{56} - 48y^{55} + \cdots - 18y + 1$
c_8	$y^{56} + 23y^{55} + \cdots - 85248y + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.866172 + 0.412104I$ $a = 0.716759 + 0.563360I$ $b = 0.408158 - 0.290046I$	$-3.84915 - 0.47402I$	$-20.0517 + 1.8006I$
$u = -0.866172 - 0.412104I$ $a = 0.716759 - 0.563360I$ $b = 0.408158 + 0.290046I$	$-3.84915 + 0.47402I$	$-20.0517 - 1.8006I$
$u = -0.188462 + 0.854305I$ $a = 1.56928 + 1.20703I$ $b = -1.35361 - 1.14786I$	$3.70616 + 10.08220I$	$-9.08620 - 8.29722I$
$u = -0.188462 - 0.854305I$ $a = 1.56928 - 1.20703I$ $b = -1.35361 + 1.14786I$	$3.70616 - 10.08220I$	$-9.08620 + 8.29722I$
$u = -0.165662 + 0.838312I$ $a = -1.65426 - 0.98689I$ $b = 1.41656 + 1.00950I$	$4.58143 + 4.28016I$	$-7.26827 - 3.33660I$
$u = -0.165662 - 0.838312I$ $a = -1.65426 + 0.98689I$ $b = 1.41656 - 1.00950I$	$4.58143 - 4.28016I$	$-7.26827 + 3.33660I$
$u = -1.050040 + 0.463708I$ $a = 0.479637 + 1.195890I$ $b = 0.907676 - 0.666506I$	$1.07406 - 5.37584I$	0
$u = -1.050040 - 0.463708I$ $a = 0.479637 - 1.195890I$ $b = 0.907676 + 0.666506I$	$1.07406 + 5.37584I$	0
$u = -1.078200 + 0.427394I$ $a = -0.272195 - 1.149050I$ $b = -1.066620 + 0.514728I$	$1.79919 + 0.26900I$	0
$u = -1.078200 - 0.427394I$ $a = -0.272195 + 1.149050I$ $b = -1.066620 - 0.514728I$	$1.79919 - 0.26900I$	0

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.617027 + 0.535939I$ $a = 0.858761 - 0.032635I$ $b = 0.0856353 + 0.0708847I$	$-0.71189 + 4.42421I$	$-14.7302 - 6.6620I$
$u = -0.617027 - 0.535939I$ $a = 0.858761 + 0.032635I$ $b = 0.0856353 - 0.0708847I$	$-0.71189 - 4.42421I$	$-14.7302 + 6.6620I$
$u = -1.168010 + 0.209136I$ $a = 0.247139 - 0.431048I$ $b = -1.026800 - 0.591291I$	$-1.37028 + 0.97595I$	0
$u = -1.168010 - 0.209136I$ $a = 0.247139 + 0.431048I$ $b = -1.026800 + 0.591291I$	$-1.37028 - 0.97595I$	0
$u = -0.241002 + 0.768489I$ $a = 0.882963 + 0.837698I$ $b = -0.943312 - 0.875499I$	$-1.88523 + 4.71954I$	$-14.7264 - 6.6425I$
$u = -0.241002 - 0.768489I$ $a = 0.882963 - 0.837698I$ $b = -0.943312 + 0.875499I$	$-1.88523 - 4.71954I$	$-14.7264 + 6.6425I$
$u = 1.225830 + 0.232995I$ $a = 0.37066 - 1.43650I$ $b = 0.872612 - 0.365716I$	$1.47062 + 1.23708I$	0
$u = 1.225830 - 0.232995I$ $a = 0.37066 + 1.43650I$ $b = 0.872612 + 0.365716I$	$1.47062 - 1.23708I$	0
$u = 1.240870 + 0.261920I$ $a = -0.09120 + 1.42966I$ $b = -1.006580 + 0.465327I$	$1.86713 - 4.74693I$	0
$u = 1.240870 - 0.261920I$ $a = -0.09120 - 1.42966I$ $b = -1.006580 - 0.465327I$	$1.86713 + 4.74693I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.140644 + 0.703431I$ $a = -1.178460 - 0.095442I$ $b = 1.155670 + 0.456832I$	$1.60637 + 2.37356I$	$-6.13877 - 4.17137I$
$u = -0.140644 - 0.703431I$ $a = -1.178460 + 0.095442I$ $b = 1.155670 - 0.456832I$	$1.60637 - 2.37356I$	$-6.13877 + 4.17137I$
$u = 0.048164 + 0.710249I$ $a = -2.01204 + 0.89303I$ $b = 1.59325 - 0.13231I$	$5.50599 + 1.24032I$	$-5.23066 - 2.33484I$
$u = 0.048164 - 0.710249I$ $a = -2.01204 - 0.89303I$ $b = 1.59325 + 0.13231I$	$5.50599 - 1.24032I$	$-5.23066 + 2.33484I$
$u = -0.448607 + 0.542572I$ $a = -0.438992 + 0.149521I$ $b = -0.297929 - 0.283370I$	$-0.279032 - 0.387064I$	$-13.17728 - 1.08778I$
$u = -0.448607 - 0.542572I$ $a = -0.438992 - 0.149521I$ $b = -0.297929 + 0.283370I$	$-0.279032 + 0.387064I$	$-13.17728 + 1.08778I$
$u = 0.086804 + 0.689503I$ $a = 2.00700 - 1.20329I$ $b = -1.55835 + 0.31132I$	$4.89165 - 4.55526I$	$-6.35177 + 3.19659I$
$u = 0.086804 - 0.689503I$ $a = 2.00700 + 1.20329I$ $b = -1.55835 - 0.31132I$	$4.89165 + 4.55526I$	$-6.35177 - 3.19659I$
$u = -1.305330 + 0.049118I$ $a = -0.193950 - 0.243423I$ $b = 0.39449 + 1.81061I$	$-2.36775 - 2.29859I$	0
$u = -1.305330 - 0.049118I$ $a = -0.193950 + 0.243423I$ $b = 0.39449 - 1.81061I$	$-2.36775 + 2.29859I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.302410 + 0.198734I$ $a = -0.712631 + 0.159499I$ $b = 1.50723 + 1.35120I$	$-4.77983 + 2.82843I$	0
$u = -1.302410 - 0.198734I$ $a = -0.712631 - 0.159499I$ $b = 1.50723 - 1.35120I$	$-4.77983 - 2.82843I$	0
$u = -1.296500 + 0.293943I$ $a = 0.904976 - 0.648287I$ $b = -2.05274 - 0.77370I$	$1.30531 + 2.39964I$	0
$u = -1.296500 - 0.293943I$ $a = 0.904976 + 0.648287I$ $b = -2.05274 + 0.77370I$	$1.30531 - 2.39964I$	0
$u = -1.322480 + 0.285611I$ $a = -1.042770 + 0.548589I$ $b = 2.18268 + 0.97725I$	$0.45930 + 8.10035I$	0
$u = -1.322480 - 0.285611I$ $a = -1.042770 - 0.548589I$ $b = 2.18268 - 0.97725I$	$0.45930 - 8.10035I$	0
$u = 1.350790 + 0.293586I$ $a = 0.501547 + 0.644493I$ $b = -1.03042 + 1.22757I$	$-3.10733 - 6.00225I$	0
$u = 1.350790 - 0.293586I$ $a = 0.501547 - 0.644493I$ $b = -1.03042 - 1.22757I$	$-3.10733 + 6.00225I$	0
$u = 1.372070 + 0.235523I$ $a = -0.076585 - 0.360451I$ $b = 0.548336 - 1.187110I$	$-5.59879 - 2.28336I$	0
$u = 1.372070 - 0.235523I$ $a = -0.076585 + 0.360451I$ $b = 0.548336 + 1.187110I$	$-5.59879 + 2.28336I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.403150 + 0.062138I$ $a = 0.772974 - 0.030882I$ $b = -0.360419 - 0.400109I$	$-6.13819 - 1.16533I$	0
$u = 1.403150 - 0.062138I$ $a = 0.772974 + 0.030882I$ $b = -0.360419 + 0.400109I$	$-6.13819 + 1.16533I$	0
$u = 1.37282 + 0.35653I$ $a = 1.134610 + 0.597959I$ $b = -1.51941 + 1.55952I$	$-0.27805 - 8.58003I$	0
$u = 1.37282 - 0.35653I$ $a = 1.134610 - 0.597959I$ $b = -1.51941 - 1.55952I$	$-0.27805 + 8.58003I$	0
$u = 1.39495 + 0.31342I$ $a = -0.767957 - 0.290710I$ $b = 1.06397 - 1.65056I$	$-7.07159 - 8.63297I$	0
$u = 1.39495 - 0.31342I$ $a = -0.767957 + 0.290710I$ $b = 1.06397 + 1.65056I$	$-7.07159 + 8.63297I$	0
$u = 1.38707 + 0.36194I$ $a = -1.225820 - 0.469271I$ $b = 1.54315 - 1.70908I$	$-1.2781 - 14.4580I$	0
$u = 1.38707 - 0.36194I$ $a = -1.225820 + 0.469271I$ $b = 1.54315 + 1.70908I$	$-1.2781 + 14.4580I$	0
$u = 1.45135 + 0.08180I$ $a = -0.739121 - 0.103503I$ $b = 0.656296 + 0.649639I$	$-7.50796 - 6.20957I$	0
$u = 1.45135 - 0.08180I$ $a = -0.739121 + 0.103503I$ $b = 0.656296 - 0.649639I$	$-7.50796 + 6.20957I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.45795$ $a = -0.872262$ $b = 0.821275$	-11.3625	0
$u = -0.035406 + 0.444835I$ $a = 0.396342 - 1.248670I$ $b = -0.772381 + 0.172570I$	$-0.691494 - 0.342390I$	$-11.27142 + 0.66679I$
$u = -0.035406 - 0.444835I$ $a = 0.396342 + 1.248670I$ $b = -0.772381 - 0.172570I$	$-0.691494 + 0.342390I$	$-11.27142 - 0.66679I$
$u = 0.316601 + 0.055324I$ $a = 0.04721 - 3.30384I$ $b = -0.067426 + 0.690981I$	$2.47292 + 2.72146I$	$-4.00548 - 3.04642I$
$u = 0.316601 - 0.055324I$ $a = 0.04721 + 3.30384I$ $b = -0.067426 - 0.690981I$	$2.47292 - 2.72146I$	$-4.00548 + 3.04642I$
$u = -0.306961$ $a = -1.09551$ $b = -0.380686$	-0.701749	-14.3130

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

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} a \\ -a \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -a^2 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -a^2 - a - 1 \\ a \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -a^2 - a - 1 \\ a \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -a^2 - 3a - 15$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -0.215080 + 1.307140I$ $b = 0$	$1.37919 + 2.82812I$	$-12.69240 - 3.35914I$
$u = -1.00000$ $a = -0.215080 - 1.307140I$ $b = 0$	$1.37919 - 2.82812I$	$-12.69240 + 3.35914I$
$u = -1.00000$ $a = -0.569840$ $b = 0$	-2.75839	-13.6150

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^3+u^2-1)(u^{56}+2u^{55}+\cdots-5u-1)$
c_2	$(u^3+u^2+2u+1)(u^{56}+18u^{55}+\cdots+5u+1)$
c_3, c_9	$u^3(u^{56}-u^{55}+\cdots+12u+8)$
c_4	$(u^3-u^2+2u-1)(u^{56}+18u^{55}+\cdots+5u+1)$
c_5	$(u^3-u^2+1)(u^{56}+2u^{55}+\cdots-5u-1)$
c_6	$(u^3+u^2+2u+1)(u^{56}-2u^{55}+\cdots-145u-25)$
c_7	$((u-1)^3)(u^{56}-4u^{55}+\cdots-2u-1)$
c_8	$u^3(u^{56}+21u^{55}+\cdots+592u+64)$
c_{10}, c_{11}	$((u+1)^3)(u^{56}-4u^{55}+\cdots-2u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^3 - y^2 + 2y - 1)(y^{56} - 18y^{55} + \cdots - 5y + 1)$
c_2, c_4	$(y^3 + 3y^2 + 2y - 1)(y^{56} + 42y^{55} + \cdots - 77y + 1)$
c_3, c_9	$y^3(y^{56} - 21y^{55} + \cdots - 592y + 64)$
c_6	$(y^3 + 3y^2 + 2y - 1)(y^{56} + 6y^{55} + \cdots + 7275y + 625)$
c_7, c_{10}, c_{11}	$((y-1)^3)(y^{56} - 48y^{55} + \cdots - 18y + 1)$
c_8	$y^3(y^{56} + 23y^{55} + \cdots - 85248y + 4096)$